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Contents

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Books. Technical information for manufacturers of drugs and cosmetics.

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"Quick, the antidote!"

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AUG 22 1961
PITTSBURGH, PA.

Keeping Posted

New Federal Trade Commission Rules

The Federal Trade Commission has just announced some far-reaching rule changes to speed up the disposition of its case-load. These new rules, in effect on July 21st, are really designed to stop delaying tactics by respondents and also to speed prosecutions by the commission's staff.

Under the new regulations all negotiations looking to settlement of a case by a consent order will be conducted prior to the issuance of the FTC complaint.

The time lag between the issuance of a complaint and before negotiations with the FTC begin very often runs into months and has at times brought about quite a bit of cynical comment in the cosmetic industry.

It has not been entirely a convention joke to say that if you want to introduce a new product in the cheapest possible way be sure to make a statement that will bring a FTC complaint. By the time the FTC gets around to you, you have had your publicity and you can then very gracefully consent to discontinue the objectionable claim.

Some years ago a new nail enamel was introduced with a very effective advertising campaign in color pages in magazines. This advertising made the blunt, unqualified statement that the new nail enamel was chip proof.

This was a complaint that every competitor objected to violently, stating that there was no such thing as a chip-proof enamel and elaborating further by saying that the enamel of the new nail polish company, except for color additives, came out of the same drum of lacquer as that of several competitors.

This advertising caused considerable uproar. In the middle of all this thunderous publicity, which certainly reached into every corner of the retail trade because of trade discussions and recriminations, and certainly to a substantial body of the public because of the very specific beautifully presented advertising, the advertising agency for this company was heard to remark, "This is working out much better than I had hoped for and if the FTC will only give me three more months I will be very happy to drop the entire claim."

As it happened he did get his three more months, plus a little bit more, before the FTC could sit down with him and persuade this not too reluctant advertiser to give up the claim which he had already squeezed dry.

As a result, this nail enamel company became one of the prominent leaders in the industry and only died after three transfers of ownership.

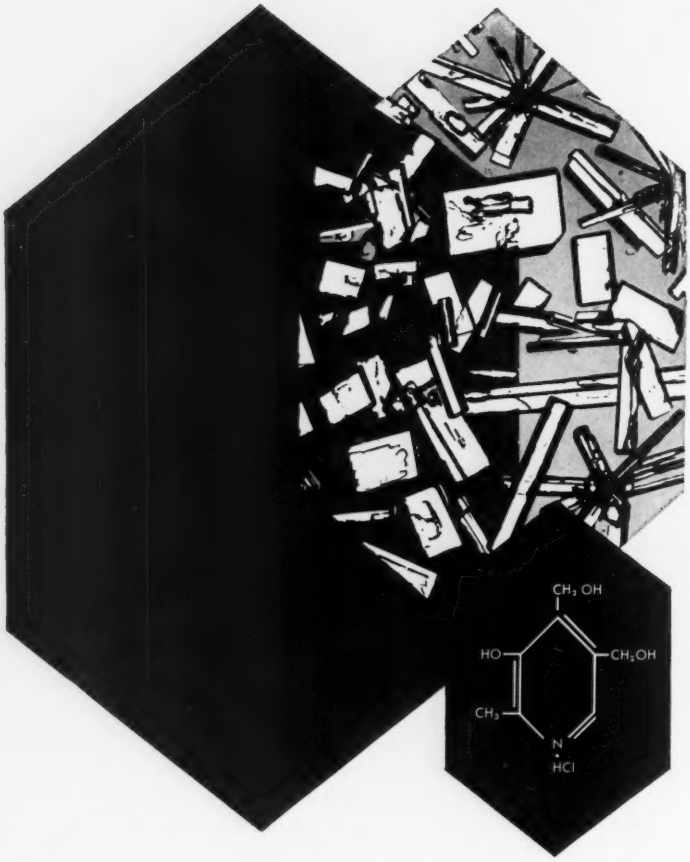
We are not trying to imply that this kind of thing happens very often. We do say, hwever, that there has been a constant temptation to abuse this substantial lapse of time that has taken place between a complaint order and a consent decree.

Under the new rule the FTC staff will no longer start a case, do the background work, and then see it end up in a consent order. Under the new procedure, moreover, there will be a great deal less public attention for any concern signing a consent order.

In another major rule change, the commission ordered that the hearing of cases "shall proceed with all reasonable expedition." All hearings will proceed in one place and will continue without suspension, except for week-ends and holidays, until completed.

Women

According to Albert Kner, Director of the Design Laboratory, Container Corporation of America, the more package designers know about women, the better. We're sure that package designers are unique, but not so unique that they are the only men who need to know more about women.



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British National Health Service

In the British fiscal year, which ended April 1, the National Health Service cost the government $2.2 billion. That was up 13 per cent from the year before, and nearly double the $1.2 billion figure for the 1949-50 fiscal year, the first to include the costs of the socialized medicine sytem for all 12 months.

In the current fiscal year, the government's drug bill alone is expected to run about $308 million. The average cost for each prescription filled in the recently ended fiscal year was $1 against 42 cents in 1949-50.

The Tory government is now moving to put more of the cost of the health service directly on those it benefits. This accounts for its doubling the 14-cent charge for each prescription filled and raising the price of National Health false teeth to $14 from the previous $12. Eyeglasses prescribed by National Health Service doctors have been marked up by 70 cents a pair to a new range of $4.30 to $6, depending on type. In addition, the government has begun selling at cost such items as orange juice, cod liver oil and vitamin tablets, formerly obtainable free or at a nominal charge if prescribed by doctors practicing under the government health plan.

Though many doctors find the plan has boosted their incomes, the socialized health service also has come in for some medical as well as political criticism. The British Medical Association describes the lack of specialists' appointments in the new hospitals that haven't been built, and the consequent bottleneck to promotion for young doctors with specialized training, as one of the most "serious professional problems confronting the doctor since the Health Service was introduced."

None of this, however, means the National Health Service has lost its political popularity. Few if any ruling Tory Party members feel the government ever could abandon the Health Service without touching off a political explosion.

Health Ministry officials, credit the Service with a major improvement in British health. "The service has brought hundreds of thousands of patients into doctors' surgeries and into hospitals early enough to check the spread of disease," says one official. The Ministry points especially to an 80.6 per cent drop in tuberculosis deaths in England and Wales in the last 10 years, and to a reduction in the infant mortality rate to around 22 per 1,000 now from 33.9 per 1,000 when the Service began in 1948.

Critics reply that a big improvement in British diets and living conditions in the last decade, brought about by a 100 per cent rise in workers' incomes, should get some of the credit, too. But even the critics usually attack abuses and rising costs under the program rather than the program itself.

The most persistent criticism made against the Health Service throughout its existence has been that it tempts many Britons to seek unnecessary treatment and medicines or exemptions from work as well as legitimate health needs.

Though all British workers are forced to contribute toward the cost of the state-run Health Service, they aren't forced to use it. Around 2 million currently prefer to pay extra for private treatment outside the government's socialized-medicine system.

By far the biggest private health plan is the British United Provident Association, which has increased its membership to 850,000 now from 65,000 when the National Health Service was established 13 years ago. Its members currently are paying about $10 million a year for the advantages of private treatment.

Rutgers Flavor Course

To meet the needs of the creative flavor chemist, the Rutgers Newark Extension Center will introduce this fall an evening course in Flavor Materials.

The lectures will provide a thorough description of flavor materials and flavor compounding as well as an opportunity to experiment with new and hitherto unexploited flavor materials.

Steffen Arctander, perfumer associated with International Flavors and Fragrances, New York City, will be the class instructor with certain lectures handled by guest experts.

The new flavor course is scheduled to meet from 6:30 to 8:30 p.m. on Wednesdays beginning October 4 for ten weeks.

The course covers available flavor materials; natural, processed, concentrated essential oils, synthetics, fruits, and abstracts; formulas; adjustment of flavor for various purposes; and the influence of temperature, sugar, salt, and bitterness upon flavors.

Detailed information regarding the flavor course may be secured at the office of the Rutgers Newark Extension Center, 601 Broad Street, Newark.

VA Drug Purchasing

As of Nov. 15, the Veterans Administration, by far the biggest drug consumer among the civilian agencies, will buy drugs needed by all the other civilian agencies. Beginning in mid-October drugs used by the Dept. of Health, Education, and Welfare in its hospitals and clinics, by the Justice Dept. in the Federal Prisons, and by other agencies such as the Atomic Energy Commission and the Interior Dept. will be supplied through the VA's distribution system.

The VA, which spends about $25 million for its own drug needs, will be handling an additional $15 million worth of pharmaceuticals for the civilian agencies, a job previously done by the General Services Administration.

James M. O'Neil, director of VA supply management services, and his aides are now studying ways to use their own methods in running the drug buying for other agencies. One advantage comes

through the VA's stocking and distribution system, which was not available to the GSA.

In addition to savings in the stocking and distribution system, O'Neil expects to introduce economies for the agencies from large-volume buying and ordering by generic names. In its own hospitals, the VA encourages the use of generic names under a "formulary system," but does not require their use. If a physician insists on prescribing by trade name, the drug will be supplied.

Of the $25 million annually the VA spends on its drugs, about $10 million is purchased by generic name, a proportion the administration expects to maintain with its added purchases for the agencies.

The VA's drive on replacing trade name ordering with generic titles dates back to 1955 when the agency cataloged 15 generic terms covering some 75 brand names. This list has grown to about 60 generic terms, covering about 300 brand names, and continues to grow.

Another cost cutting move the VA expects to continue under the single manager setup is foreign buying. In the last 12 months the administration has bought $800,000 worth of drugs abroad, notably tranquilizers and certain antibiotics. But O'Neil comments, "We don't want to buy abroad. We just want to see the U. S. firms meet the price."

Kintner Retained by N.A.R.D.

The N.A.R.D. has retained Earl W. Kintner, as its Antitrust Counsel.

Mr. Kintner is the immediate past chairman of the Federal Trade Commision, having served in that capacity for almost two years. Prior to being named to the Commission's top spot, Mr. Kintner served as the agency's general counsel for six years. And before that he was a trial attorney of the F.T.C. for several years. Currently Mr. Kintner is a member of the Washington, D. C., law firm of Arent, Fox, Kintner, Plotkin, & Kahn, specializing in antitrust and administrative law.

He has been asked to develop and launch an educational program to acquaint drug retailers and their association representatives with the nature of their responsibilities under the antitrust laws. The N.A.R.D. believes it has the responsibility to take all steps necessary to prevent retail pharmacists and their association representatives from running afoul of any antitrust or trade regulation law. There must be a clear understanding of the extent to which the Sherman Act and the other antitrust laws apply to the activities of retail pharmacists.

In the antitrust educational program that Mr. Kintner is undertaking for the N.A.R.D., equal attention will be given to both the positive and negative aspects of antitrust legislation. He will explain how the antitrust laws benefit retail pharmacists, by insuring that business is conducted according to the rules. In particular Mr. Kintner will show how the Robinson-Patman Act, the Federal Trade Commission Act, the Clayton Act, and even the Sherman Act can be used to advantage by retail druggists.

Arrangements are now being worked out to have Mr. Kintner make his first major address to retail pharmacy leaders at an Antitrust Seminar to be held under N.A.R.D. auspices in the near future in Washington, D. C. In addition, retail pharmacists from all over the country will have an opportunity to hear Mr. Kintner at the N.A.R.D. Convention to be held in Miami Beach, Florida, October 1-5.

A "Guide to the Antitrust Laws For Retail Pharmacists" will be prepared as soon as possible by Mr. Kintner. This useful, informative guide will be published and distributed to all N.A.R.D. members and to pharmacy school students. The Robinson-Patman Act, the Federal Trade Commission Act, the Clayton Act, and the Sherman Act will be covered in some detail.

Six Month Sales and Profits

Parke, Davis & Company reported world-wide sales of $90,152,831 and earnings of $9,425,323 for the first six months of 1961. This compares with earnings of $15,130,626, for the first six months of 1960 on sales of $99,045,616.

During the second quarter of 1961, Parke, Davis had net sales of $42,621,857, and earnings of $3,672,775, compared with $45,628,447 in sales and $5,579,094, in earnings for the second three months of 1960. The firm previously reported 1961 first quarter sales of $47,530,974, and earnings of $5,752,548.

Plough, Inc., reported record high estimated sales, earnings and earnings per share for the first half of the year.

Sales for the first six months were $25,100,000 compared to $23,500,000 for the same period last year.

Net earnings after taxes rose to $1,700,000 from $1,625,000 for the same period in 1960.

Smith Kline & French Laboratories reported consolidated net sales for the first six months of 1961 at $77,972,644. This was an increase of about seven per cent over the $72,949,258 for the first six months of 1959.

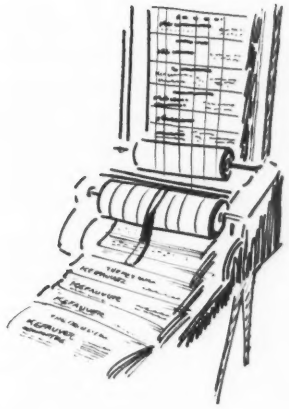
Earnings before income taxes for the first half of 1961 totaled $30,742,283. After estimated taxes of $16,637,622 net earnings for the first half of the year were $14,104,661, compared to $12,146,050 for the first six months of 1960. This was an increase of some 16 per cent.

Hudson Vitamin Products, Inc., reported that sales and earnings for the fiscal year ended May 31, 1961, were the highest in the company's history, with net income exceeding one million dollars for the first time. Net sales in the most recent fiscal year increased six per cent to $7,800,177 from $7,348,656 in the 12 months ended May 31, 1960.

Net income was $1,027,991, as against $987,108, in the prior year. This represented an increase of four per cent. •

PMA CHARGES Kefauver Duped The Press

BY MILTON MOSKOWITZ



Like the heroine in "South Pacific," the pharmaceutical industry would like "to wash that man right out of my hair." The man in question here is, of course, Estes Kefauver, Democratic Senator from Tennessee. Only in the drug industry's case, the desire is *real* and does not stem from love-sickness. Wherever and whenever the industry gathers these days, the name "Kefauver" is inevitably raised—usually through clenched teeth, with an agonizing grimace and the blood rushing quickly to the head. Sen. Kefauver has earned the undying enmity of the industry by his seemingly endless investigation of its affairs. This investigation by the Senate Subcommittee on Antitrust and Monopoly, of which Sen. Kefauver is chairman, began on December 7, 1959. It is still going on and, judging from the rash of new subpoenas just issued, there is no end in sight yet. A 260-page report on the hearings conducted during the first year was issued at the end of June. It consisted basically of a rehash of the charges already made by the committee staff. Then, in the first week in July, hearings were resumed in Washington, with the drug industry again subjected to some withering blasts from the double-barreled Kefauver shotgun.

Ever since the investigation began, the pharmaceutical industry, placed on the defensive, has been considering ways and means to counterattack. Several companies came down to Washington loaded for bear. One company, Merck & Co., had two Nobel prize winners in tow. Nevertheless, it is generally conceded, even within the industry, that as far as public exposure goes Sen. Kefauver proved to be more than a match for these antagonists. Early in the game the Pharmaceutical Manufacturers Association turned for help to Hill & Knowlton, the nation's largest public relations organization and a company reputed to be an expert in helping "industries in trouble." Hill & Knowlton has vigorously defended the steel industry for many years, it has toiled valiantly for the tobacco industry in the face of the lung cancer scares and it recently took on the advertising agency industry as a client. The PMA is reportedly paying Hill & Knowlton an annual fee well in excess of $50,000.

The kind of service Hill & Knowlton is providing was much in evidence during the last week in June. It was known in advance that the Kefauver report on the first year's hearings was scheduled to be filed with the Senate about that time. Hill & Knowlton, acting for the PMA, was ready this time. It prepared in advance its own report, which ran to 172 pages and which constituted an angry rebuttal to everything Kefauver was expected to say. The report was entitled, "The Untold Story of the Drug Hearings" and it bore the imprint of the PMA. This report was held in readiness until it was learned that the Kefauver report had been formally filed with the Senate. As soon as word was received that the report had been filed, copies of "The Untold Story of the Drug Hearings" began moving out of the smooth-working offices of Hill & Knowlton in New York and Washington, D. C. They went to major metropolitan newspapers, news magazines, wire services, business papers and radio-tv news desks. Also on the schedule to receive the PMA-H&K rebuttal were medical publications (including every state journal), every single member of Congress, large libraries and certain national opinion leaders. It was, in short, a typical Hill & Knowlton effort to influence public opinion on a major issue.

And what happened?

It may be too early to tell—Hill & Knowlton insists that the report was designed mainly to serve editors as "background information"—but the first indications are that this heavy tome fell with a thud

to the bottom of many wastepaper baskets. The subsequent news stories repeated many of the charges leveled against the drug industry and there was hardly a mention of this massive rebuttal by the PMA's public relations counsel. As a matter of fact, Sen. Kefauver resumed hearings in Washington one week after the PMA report was issued and he inaugurated this session with a ringing blast in which he asserted that the patience of the American people "is wearing thin" with the "price-gouging in drugs." He further charged that the profit in the pharmaceutical industry are "astonishing." Newspapers all over the country carried this denunciation and there were apparently no editors or reporters who felt the need to refer to the copious "background" material supplied by the PMA. The news about this industry is still being made by the determined Senator from Tennessee, who was his party's candidate for Vice President in 1956.

This result is, of course, not too surprising. Editors are constitutionally suspicious of all handouts (no matter how well done) from interested parties. They automatically discount them. We don't know how many editors actually read the Hill & Knowlton report but we suspect that those who did may have bridled not a little at one unusual feature of this rebuttal. It has been part of the standard rhetoric of leftwing groups to allege that the press distorts news and acts as a servant of the monied interests. Now the shoe is on the other foot. The U. S. pharmaceutical industry, through its public relations counsel, is charging that the press has failed to do an objective job in reporting the drug hearings. The PMA says, in effect, that Sen. Kefauver made dupes of the American press.

This is a somewhat sensational—and risky—indictment for a public relations company to make—but make it Hill & Knowlton does. "A thoughtful study of the record," the PMA report states, "brings to light another fact of this investigation—headlines and news stories did not cover all the facts as presented. Rather, they gave the impression of industry guilt—presenting dramatic charges, while ignoring the factual rebuttals in the main." Hill & Knowlton is quick to add that "the press was hardly guilty of slanting the news" but that it ended up with a "one-sided coverage" because of some sharp rigging practices by the publicity-wise committee. (Question: Isn't Hill & Knowlton publicity-wise?) As examples of typical committee tactics, the report cites the following:

"Timing of damaging charges to coincide with newspaper headlines and conversely, scheduling of friendly testimony when it is least likely to get public attention."

"Hand-picking of witnesses to echo the preconceived judgments of the majority staff and, conversely, failure to invite witnesses representative of organizations like the American Medical Association that have broad professional knowledge and support."

"Repeating damaging accusations but hurrying over sober answers to them."

"Limiting testimony expected to be favorable to the drug industry, but dwelling at great length on some subject that seemed sure to have headline value."

"Building up small business competitors emotionally as Davids confronting heartless Goliaths."

Numerous examples are cited in the report in an effort to show how the U. S. press was taken for a ride by Sen. Kefauver. On the opening day of the hearings, it is pointed out, the committee produced headlines for the afternoon papers by claiming a markup of 1,118 per cent over manufacturing cost in the price of prednisolone. Then, Hill & Knowlton continues, the committee took care of the morning papers by introducing later in the day a charge that there was a markup of 7,079 per cent in the price of estradiol, marketed by Schering Corp. as Progynon. The report points out that many newspapers "translated 'markup' into 'profit'— a stigma from which it may take the drug industry years to recover." Francis C. Brown, president of Schering, was given no advance notice that these charges were to be made. "Accordingly," the PMA report says, "he would be unprepared to make detailed and persuasive rebuttal until a later day, and then his refutation no longer would be newsworthy."

Another example: A 36-year-old associate professor of medicine, testifying on corticosteroids, criticized the drug industry. "Naturally his testimony got the headlines." However, when the head of the department of rheumatic diseases at Mayo Clinic for 33 years later questioned the younger man's judgment on this point, he got "no headlines."

Another example: Dr. Chauncey D. Leake of Ohio State University criticized drug advertising but also had some kind words to say about the industry. Newspapers ignored the kind words and played the story this way:

"Ignore Drug Promotions, Doctors Urged"

"Drug Firms Said to Huckster Medicine"

"Drug Makers Hide Facts, Expert Says"

This, Hill & Knowlton says, shows how "sin gets the front page headlines."

Another example: Dr. James E. Bowes, a private physician, assailed "excessive" advertising expenditures by drug houses. He quoted figures which he derived by taking the cost of promotional materials received in his office and multiplying by 150,000—supposedly to get a national cost. The PMA later checked out his figures with the individual manufacturers. Dr. Bowes said Wallace Laboratories spent $1,548,998 on promotion in December, 1959; Wal-

(*Continued on page 226*)

TRENDS in Product Development

BY PAUL DE HAEN

Mr. de Haen's discussion of product development during the last three years was first presented at the Graduate Seminar of the School of Pharmacy, Columbia University, in May. In this issue he takes up the drugs for the treatment of cardiovascular, mental and neurologic disorders and gastrointestinal diseases. Other areas will be discussed in a subsequent issue.

It is axiomatic that every period of product development is governed primarily by the basic discoveries that are made during such a period or during those that have immediately preceded it. Everything else is a modification and application of the newly acquired knowledge. This does not rule out the occasional discovery of an entirely new and unrelated chemical that exerts an unsuspected action, such as triparanol or MER/29.

Since the Fall of 1958, I have described research carried out on new products and other matters pertaining to the pharmaceutical industry in each issue of Lippincott's *Medical Science*. This review represents today some 700 pages of manuscript. There has never been any lack of material to write about. Now, what were the major categories, out of a group of 72, which were discussed during this time? In order of frequency, one might list them as follows:

	Times Discussed
Cardiovascular Disorders	54
Mental and Neurologic Disorders	46
Gastrointestinal Diseases	31
Hormonal Disturbances	27
Antibiotic Therapy	20
Cancer Chemotherapy	17
Analgesics, Narcotics and Anesthetics	17
Dermatology	13
Antiinflammatory Agents	10
Vaccines and Virus Diseases	8
Arthritis and Gout	5
Muscle Relaxants	6
Side Effects	6

This list indicates some of the primary interests of pharmaceutical research and product development during the last 32 months. It is only fitting that cardiovascular diseases and mental disorders are found in first position. The first ranks highest in mortality, and the other in morbidity. In spite of a tremendous amount of research, we are still far from solving these problems. We must find entirely new approaches in diagnosis and therapy before we can expect real progress. But we have advanced, and this is what has happened in recent years:

Cardiovascular Disorders

It is now generally agreed that anticoagulants are useful agents in the prevention and cure of myocardial infarction, cerebral thrombosis and other similar conditions. Still, they do not seem to be prescribed by the profession to the extent that they deserve. The product primarily prescribed today is Coumadin (warfarin sodium), which last year became available as potassium salt in the form of Athrombin-K. The Schering Corporation entered this market with Miradon (anisindione). This drug requires a single daily maintenance dose of from 1 to 3 tablets of 50 mg. each. Absorption appears to be fairly uniform and rapid. A therapeutic level is reached within 36 to 72 hours, and excretion is relatively rapid. The use of anticoagulants will no doubt be extended as drugs with a more uniform response become available, and as simpler prothrombin tests are offered. The medical profession also must learn to recognize the importance of occult blood in the urine as an early sign of impending toxicity. Very simple tests for occult blood are now available.

A rather interesting development has been the preparation of a sublingual form of heparin potassium (Clarin-Leeming). In this dosage form heparin does not affect clotting time of the blood even over an extended period. It acts primarily as clearing agent for serum chylomicrons. The drug finds its primary

indication in post-coronary patients and in those who show early signs of atherosclerosis. Recent investigations at the Hahnemann Medical College suggest that it also might be useful in the management of the disturbances of lipid metabolism of diabetic patients.

Angina pectoris is a prevalent and severely handicapping condition, although it is not always easy to diagnose. Considerable publicity has been given to the possible usefulness of monoamine oxidase inhibitors in the management of this condition. The use of these drugs for the treatment of angina was first recommended in 1958 by Teodoro Cesarman of the National Institute of Cardiology of Mexico. Angina patients receiving monoamine oxidase inhibitors seem to be more alert and more cheerful. There is a feeling of well-being and a reawakening of energy. The most important benefits may be the ability of the patient previously disabled by angina to walk distances he was formerly unable to walk, and the relief of pain.

Quinidine sulfate has been used for many years in the treatment of atrial fibrillation and similar cardiac disorders. Unfortunately, because of gastrointestinal reactions, it was necessary to withhold the drug from many patients. A. Halpern developed a new salt, quinidine polygalacturonate, which reduces the ionic shock to the gastrointestinal mucosa resulting from a flood of irritating quinidine ions. Polygalacturonic acid is obtained from pectin. The drug has been marketed by Purdue Frederick as Cardioquin. Patients receiving it have experienced no side effects in spite of relatively high doses.

In this period the synthesis of drugs for hypertension and edema has received the greatest attention. In the field of hypertension there were four interesting developments. For the treatment of mild to moderate hypertension, Ciba Pharmaceutical Products offered a synthetic analog of reserpine, syringopine (Singoserp). This rauwolfia derivative requires somewhat higher doses in mg. than reserpine, but produces fewer side effects. Drowsiness and sedation occurred in only 2.2 per cent of 2000 patients and nasal congestion in only 5.2 per cent. A few preliminary and encouraging reports were presented at the meeting of the Federation of American Societies for Experimental Biology in Atlantic City in 1961 on the use of an analog of meprobamate which was developed by Wallace Laboratories and will be known as Capla. It previously had been observed that meprobamate exerts a slight hypotensive effect in some patients. The attempt was then made to synthesize a new compound emphasizing the hypotensive action of meprobamate and lessening its tranquilizing action. This endeavor seems to have been successful and Capla will be marketed this year.

Ciba Pharmaceutical Products carried out a routine screening of guanidine compounds which have been of some value in the treatment of trypanosomal infections; however, this study yielded an entirely new hypotensive agent which was given the name Ismelin (guanethidine). The action of this drug differs from that of other antihypertensive agents. Guanethidine is claimed to act at the nerve-arteriole junction where it apparently opposes the release and/or distribution of the pressor substance norepinephrine. The compound has a prolonged period of action and a single daily dose is usually sufficient, but dosage must be carefully adjusted to the requirements of each patient and each patient's response to the drug must be carefully observed.

Ganglionic blocking agents are usually employed for the treatment of the more severe types of hypertension. Research workers in the United States and in Germany developed, independently of each other, the ganglionic blocking agent trimethidinium methosulfate, which has been marketed by Wyeth under the name of Ostensin. This drug appears to be particularly effective for the treatment of diastolic hypertension. It is effective in small doses and has a prolonged period of action. Constipation seems to appear less frequently than with other ganglionic blocking agents.

Because the benzothiadiazides represented a new concept in the treatment of edema and hypertension, considerable research was spent on these products

both from a pharmacologic and a clinical point of view. After the introduction of chlorothiazide and hydrochlorothiazide, seven additional preparations of this group were introduced in recent years. While it has been possible to reduce still further the effective dose of hydrochlorothiazide, no real clinical advantages have developed to indicate superiority of one drug over another. Although manufacturers have spent considerable funds on the promotion of the newer items, the benzothiazide market is still dominated by Diuril, Hydro-Diuril and Esidrix. It was believed that the newer compounds would have less effect on potassium excretion, but this hope has been fulfilled only to a small extent. Several combination products have been introduced with tranquilizers, rauwolfia and other agents, some of them quite successful commercially.

Two other diuretic agents that have an entirely different mode of action deserve special mention. These are Hygroton of Geigy Pharmaceutical and Aldactone of G. D. Searle & Co. Hygroton, or chlor-

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THE MAKEUP MARKET

Makeup, perhaps the most ancient of cosmetics, is widely used today, and the market is extremely good—but it could be better. This study indicates possibilities for improvement.

The cosmetic products used for makeup probably have the largest history of any products in the cosmetic industry. Used long before fragrance, and certainly long before any products for care of the skin or hands or hair, or for the bath, makeup, whether for religious ceremony or simply to decorate the human face or body, appeared first at a very early period of human civilization. Even today, the most primitive peoples use some form of makeup, often, at least from our viewpoint, in an extraordinary way.

In analyzing the market and the market potential of makeup products, we have included in this classification lipstick, face powder, rouge and the various products for eye makeup.

Lipstick

Lipstick should be the pride and joy of the cosmetic industry. Not only is it a widely successful commercial product produced and marketed by a large number of cosmetic companies; it also has the distinction of being at once the most essential product a woman enjoys, and one of the most frequently used products.

Because of the amazingly widespread use of lipstick among women of all ages, in all income groups, and in every geographical locality, it might be concluded that it had about reached the point of market saturation. As the accompanying tables show, however, that would be a superficial conclusion. Closer analysis makes it obvious that there is still a substantial potential market for lipstick.

During the last ten years the purchase of lipsticks has accelerated, but the increase in the number of women using lipsticks has not kept pace. In other words, even ten years ago, 85 per cent or more women in every classification were purchasing lipsticks.

The source of the increase in the sales of lipsticks in these last ten years has been an expansion of use in certain age groups, notably in the 14 to 17 age group; in the frequency of use of lipstick in small towns, rural sections and among the lower income groups; and a considerable increase in the number of women possessing between two and five lipsticks at one time. These three sales stimulating factors are in full force at present, particularly the frequency of use of lipsticks and, stimulated by fashion and color consciousness, the increasing desire of women to possess several lipsticks.

Rouge

The opportunity for expanding the market for rouge lies in the total increase in the market for makeup products as well as in a new approach to beauty that has been developing vigorously in the United States. Rouge falls within a general product classification in which there has been a great deal of fluidity in product development and in consumer acceptance.

As the tables show, the use of rouge is more susceptible to age, and also to income and geographic influences, than are other basic makeup products.

Face Powder

The market for face powder, as was pointed out earlier in this series, is closely allied with that of the makeup foundation. The great potential for these products was evident in the usage figures: an average of 26 per cent of women use a foundation product, varying from around 12 per cent at the age of 15 to 21 per cent at the age of 55. Even if these figures are somewhat low, it is evident that the potential is great. Furthermore, it is now beginning to be developed. The introduction of emulsified and liquid forms of foundation is now being reflected in sales figures. These new foundations will continue to stimulate the market for face powder, especially the sales of loose powder. Although the figures show that face powder is well accepted by all age groups, expansion is possible among the group from 14 through 25, and, with concerted effort, the figures for all age groups could be raised at least 30 per cent. Again, according to income brackets, the record for face powder is good across the board. But the differential between occasional and regular use at all income levels gives some

idea of the job that can be done in increasing the market.

The tables, which give a broad picture of the market for makeup products, have been assembled from several sources made available to us by companies in the trade. These are composite figures representing the several surveys.

TABLE 1 includes statistics on use from several surveys. Its importance lies in its differentiation between occasional use and regular use of a cosmetic product.

TABLE 1
USERS OF MAKEUP PRODUCTS
Percentage of All Women

	Occasional users	Regular users
Lipstick	89	81
Face Powder	58	44
Rouge	39	26
Eyebrow pencil	37	26
Mascara	27	16
Eye shadow	18	12
Eye liner	9	5

The users of makeup include a substantial number of women in various economic groups or age groups and in different parts of the country who only occasionally use lipstick, face powder or other products. As a part of the cosmetic market, they are particularly interesting because they represent the real potential for market expansion.

The first column of TABLE 1 includes both regular and occasional users, the second column, only those women who have specifically stated that they are regular users.

It seems a fair assumption from these figures that 8 per cent of the women who use lipstick do not do so regularly; the same is true of 14 per cent of those who use face powder and 11 per cent of those who use eyebrow pencil.

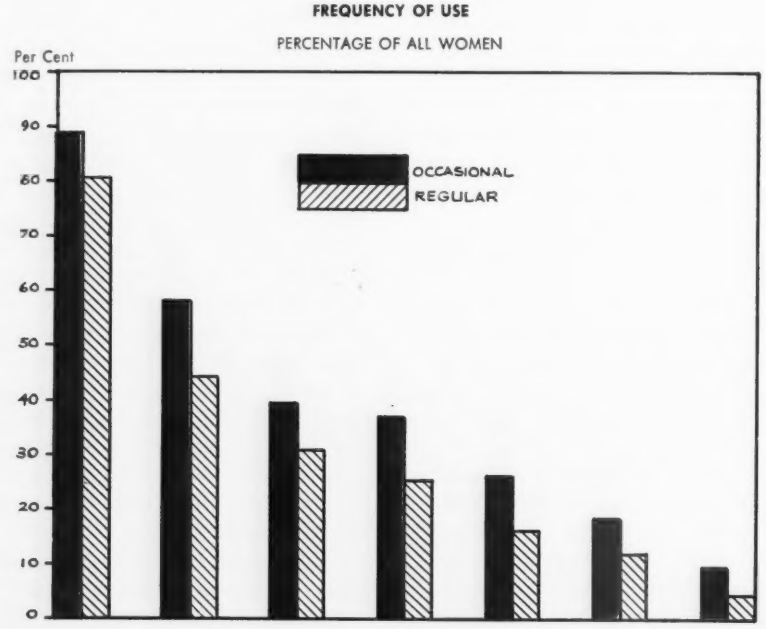
Over and beyond this, 11 per cent of all women in the United States either use no lipstick at all or use it so rarely that they do not consider themselves to be lipstick users. For this reason, it can be assumed that the women who do not use lipsticks and the women who use a lipstick only occasionally together comprise 79 per cent of our female population—certainly a good market for expansion even in the case of this number one volume cosmetic.

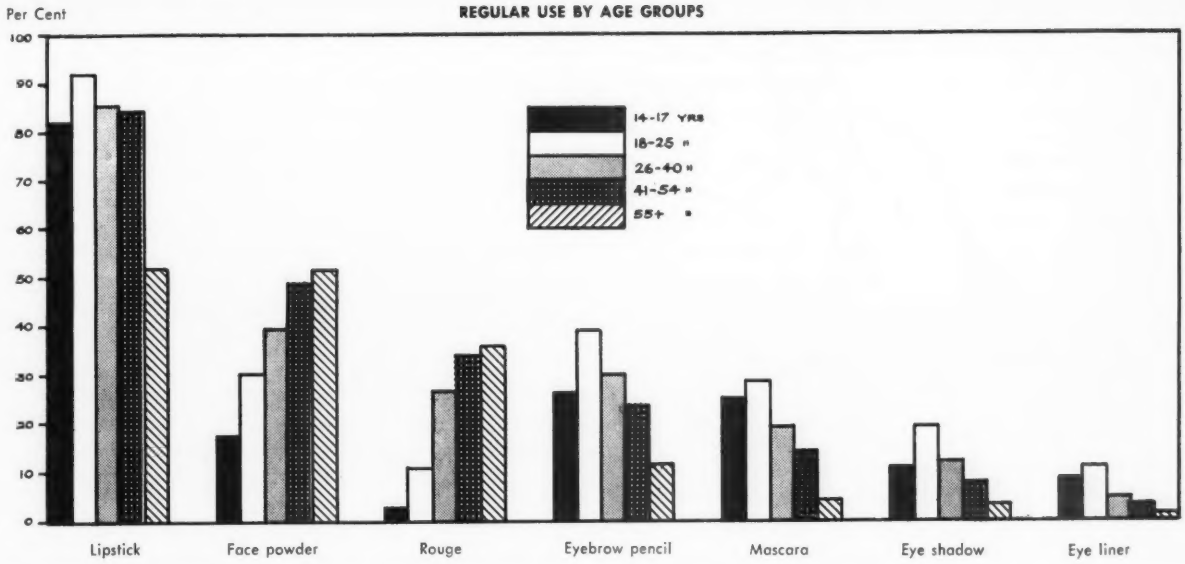
TABLE 2 (opposite page) contains much data that is available but difficult to assemble, because sources are so diverse. Here, as in the other tables, we have included only figures showing regular use, since this is the basic cosmetic market. Some percentages in TABLE 2 are difficult to explain, yet, in practically every case, figures that seem strange or abnormal have been verified by several surveys.

It is interesting how often the mountain states—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada—outrank the averages and, in some cases, every other section of the country.

Some years ago the Bureau of Labor Statistics made a study of cosmetic consumption in a number of leading cities. The figures showed quite a variation in per capita consumption among cities in different parts of the United States. In a few cases the variation was astounding, the city of highest per capita consumption running almost double that of the city having the lowest per capita consumption.

A representative of the BLS in charge of the study





told us then that these variations were essentially a matter of climate, social conditions and, particularly, ethnic habits of consumption. For instance, in one city heavily populated by descendants of a certain part of Europe, the tradition was to spend heavily on food and social activities connected with food, and less for clothing and appearance. In a different part of the country in another city where a large part of the population represented descendants from a totally different ethnic group, almost the reverse tradition applied.

In other words, this table must be viewed with the knowledge that many intangible factors, as well as the tangibles of income and employment, enter into the picture.

As can be seen from TABLE 3, the size of a city is rapidly losing its importance for the use of cosmetics in the U. S. Today, transportation is so universal and so easily available that the social life of a city of 10,000 may not vary substantially from that of a metropolis.

Certainly anybody at all familiar with life in our cities knows that from the viewpoint of apparel and general social behavior, there is little variation regardless of their relative size.

Of course, certain current developments may change this picture. As one instance, consider the drastic changes that are taking place in the population of our major metropolitan centers.

TABLE 3
PERCENTAGE REGULAR USERS OF MAKEUP PRODUCTS
By City Size

	More than one million	Million to 250,000	250,000 to 100,000	100,000 to 10,000	2,500 or less
Lipstick	92	92	87	86	83
Face powder	56	57	64	52	60
Rouge	37	39	35	27	41
Eyebrow pencil	46	46	29	31	31
Mascara	38	29	21	31	28
Eye shadow	27	15	14	14	9
Eye liner	14	10	9	6	6

As should be expected, age groups are a significant determinant in cosmetic consumption. (See TABLE 4, page 250.) Among the important factors that have caused a noticeable increase in cosmetic consumption during the last decade has been the dynamic growth of the teen-age market.

Most of the variations and plausible reasons for these variations are generally well known to the in-

(*Continued on page 250*)

TABLE 2
PERCENTAGE REGULAR USERS OF MAKEUP PRODUCTS
By Geographic Areas

	Average	New Eng.	Middle Atl.	E. N. Cent.	W. N. Cent.	S. Atl.	E. S. Cent.	W. S. Cent.	Mount.	Pacif.
Lipstick	89	87	91	89	90	87	84	84	91	93
Face powder	58	54	55	64	67	53	69	68	51	48
Rouge	39	37	34	38	42	39	49	42	38	34
Eyebrow pencil	37	39	42	38	43	31	33	37	47	42
Mascara	26	27	32	31	39	24	25	26	39	42
Eye shadow	18	19	22	16	16	9	12	12	29	28
Eye liner	9	8	10	9	6	4	6	6	9	14

Generic-Named DRUGS

BY FRANCIS E. BOYER
CHAIRMAN OF THE BOARD, SMITH KLINE & FRENCH LABORATORIES

Mr. Boyer exposes the fallacies in expecting generic-name prescribing of drugs to reduce consumer costs, and demonstrates that generic equivalents are not necessarily quality equivalents. His discussion was first presented in April at the Public Health Forum of the Brooklyn College of Pharmacy, Long Island University.

Starting with the Kefauver hearings, the critics of our present system of medical care and of the pharmaceutical industry have urged that the physician prescribe by generic rather than by trade names. This, they say, he should do voluntarily and, if he will not do it voluntarily, he should be forced to by some kind of government pressure, certainly in the welfare area.

If the doctor will only prescribe by generic name, it is alleged that his patients (A) will save a *great deal* of money, and (B) will get just as good medication as they would with brand-name prescriptions.

I think that this is a fair summary of the case presented by the critics. It is my contention that the only trouble with it is, that both A and B just aren't so. They are both statements contrary to fact, and facts are stubborn things.

Let us therefore examine these two arguments for generic prescribing.

First, how much money *is* the patient likely to save? Some estimates of the savings to be brought about by generic prescribing are simply fabulous, presumably based on much publicized comparisons of a few price tags of individual items. For example, one national magazine recently stated, "By asking your doctor to prescribe drugs by their standard chemical names where possible, rather than by brand names, you may cut the cost of your prescriptions by 50 per cent or more."

Now, possibly a case or cases could be found in which savings do amount to "50 per cent or more." But to imply that this is generally true is about as misleading as to say you may win $12,724 at the races by betting $2 on the Daily Double. It is true that a few lucky bettors once actually did collect this amount. It was the payoff at Caliente on July 4, 1954, and one of the horses' names, by the way, was Slick Trick.

But what, in the palace of truth, is likely to be the real savings to the patient on generic prescriptions?

Last summer I asked SK&F's marketing research people to give me a list of what they thought were the 20 largest-selling prescription specialties. Now, of the 20, three were mixtures, and I know of no practical way of giving generic names to mixtures. But, more important, of these same top 20 prescription items, 13 were patented, and I can see little probability that generic-name prescribing would cause any price reduction at all in the case of a patented item.

Expressed a little differently, out of this list of 20 top sellers there were only four which had any even theoretical "generic equivalents," or with which *any* saving was likely under generic prescribing.

This fact made the alleged 50 per cent savings through generic prescribing look pretty doubtful, so we made a couple of studies, one an actual field survey, of items that were actually available under both brand and generic names. In one of these, the generic prescriptions showed an average saving of 11 per cent and, in the other, the saving was 12 per cent.

Finally we made an estimate of the total picture, and concluded that, if universal generic prescribing were in force, the savings to the consumer would be

somewhere between 2 and 7½ per cent.

Well, the cynic might suspect that this was a biased study made by a wicked manufacturer, so I'll now give you another study. Here I quote from the *Rhode Island Medical Journal* of January, 1961:

"The (Rhode Island) Division of Public Assistance examined 10,000 drug prescriptions for welfare recipients for the purpose of determining the actual savings to the department of "generic" versus "trade-name" drugs. The drugs had cost $28,000. Substituting generic drugs whenever possible would have provided a saving *of less than 5 per cent* ($1,400). Syracuse has made a similar study in drug costs with comparable results."

Somehow the 50 per cent saving from generic prescriptions has evaporated down to 5 per cent.

So much for argument A. Now, let's turn to argument B: that, with generic prescribing, patients will get just as good medication as they would with brand-name prescriptions.

To begin with, what are the statements of unquestioned authorities as to just how equivalent many so-called generic equivalents actually are?

Dr. Lloyd C. Miller, director of revision of the USP, told the Kefauver subcommittee, with respect to generic-name prescribing and dispensing: "My opinion, sir, is that it is unsafe because there is not sufficient policing of our standards at the present time."

Also in the Kefauver hearings, another witness, an associate professor of pharmacology, after censuring the industry for excessive promotion of brand names, under questioning admitted: "At present I would not be happy with a generic-named drug if I did know what company made it."

At the convention of the American Pharmaceutical Association in 1959, Dr. Albert H. Holland, former medical director of the Food and Drug Administration, really nailed the thing down when he said:

"The naive belief that, if a product was not good, the FDA would prohibit its sale is just not realistic. FDA labors long and diligently to protect the public, but the fact of the matter is that it is completely impossible for the FDA to check every batch of every product of every manufacturer that is marketed. Hence the integrity and reputation of the manufacturer assume unusual significance where drugs and health products are concerned."

Now, these statements are perhaps mere opinions, though admittedly, they are the judgments of experts in the field. What *facts* can we bring to bear on the question?

Mr. H. L. Flack, director of pharmacy of Jefferson Medical College, reported to the 1959 convention of the Parenteral Drug Association on the results of a random sample of 15 purchases from different suppliers of ascorbic acid injection. His tests showed that "almost one-half (47 per cent) of this sample failed to meet the USP minimum standard."

Now let's call on FDA Commissioner Larrick. Before the Kefauver sub-committee, Mr. Larrick testified that over a period of 10 years the Food and Drug Administration had to take action only four times against any of the 28 well-known companies that produce 87 per cent of the nation's drugs, the vast majority of them under trade names. In sharp contrast, the FDA had to take 484 actions against 235 of the 1200 or so lesser known companies that produce the remaining 13 per cent.

A recent survey of SK&F offers additional evidence. Two of our prescription specialties were shopped in a statistically significant number of stores in several cities, roughly half of the prescriptions being written for the brand name and half for the generic name. When these drugs were analyzed, the active ingredient content of the so-called "generic equivalents" was found to fall outside the extremes of tolerance established by the U. S. Pharmacopeia in *35 per cent of the cases*, whereas all samples of the branded products were of top quality.

Finally, the January 20 issue of the *Medical Letter*, which, heaven knows, cannot be accused of unduly favoring brand-name drugs, reported on a study of secobarbital capsules purchased from 36 different drug companies. Samples of capsules purchased from Eli Lilly, the principal brand-name manufacturer (Seconal) as well as those from 26 other companies, conformed fully to USP standards. Samples from the nine other companies failed to meet USP standards because of excessive weight variations; one company's product showed capsule-to-capsule variations of from −41 per cent to +40 per cent.

What do these facts demonstrate in regard to the quality of generic drugs?

Unquestionably many products sold under generic names are of the highest quality. On the other hand, as these surveys show, an appreciable percentage are not. It is sad but true that some manufacturers of cheaper "generic name" products have neither the money, nor the skill, nor the facilities to make an effective product and to insure the quality of every batch produced. Quality control may require as many as a thousand tests from raw drug to finished product. Time and again it has been shown that the only real guarantee of a drug's quality is the integrity of the firm which makes it, and the trade mark, the brand name, is the pledge of that integrity.

As I said I would, I have tried to avoid side issues, and have stuck to an examination of the two main arguments advanced for generic as opposed to trade-name prescribing. To me it seems that very little is left of these arguments. The theory "equally good products at a great saving to the patient" remains a theory, in complete opposition to the facts, and once again facts are stubborn things.

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REGULATION AND GROWTH

BY PETER VAUTIN

Government investigations are interfering with industry's planning for growth.

Many men in the drug and cosmetic industry are beginning to watch Washington with a heavy feeling of uneasiness. Very few are openly convinced that Washington is entering a period of aggressive antibusiness policies. But they are alarmed by the rapid succession of policy announcements emanating from various important bureaus and congressional committees.

A glossary of federal criticism and investigations in the drug industry would, at this time, take quite a bit of space. Probably more action by more bureaus and more committees of Congress are directed toward this part of the industry than has ever been the unhappy lot of any other industry.

The whole problem of generic names, of the way drug companies advertise and conduct their selling operations, of the economics of pricing, cannot, for instance, be entirely separated from the industry's expenditures for research.

The net result of industry research is a series of commercial products produced by privately or publicly owned corporations. These products, or at least a high percentage of them, must become commercial successes to justify research and pay for it.

To make a commercial success of a new product derived from research, each manufacturer must consider the probable life-time of this product before obsolescence. More seriously, he must appraise the interval of time he has to establish this product before competition breaks in.

That takes money—often a lot of money spent in a short time.

Price, brand names, sales and advertising, all are a part of the essential sequence to successful research. That's why this whole problem is much more serious and complicated than many bureau and committee members seem to realize, and much more complicated than many honestly indignant committee witnesses seem to understand.

Beyond the specialized problems of the drug industry now so much in the Washington limelight, are a number of new bureau rules and regulations, new committee investigations and new committee complaints about business practices.

For Instance, Advertising

The Federal Trade Commission is taking a tough attitude on advertising claims. Nearly everybody will admit that in many cases on record the industry is vulnerable. Nevertheless, it is not entirely true, as the Federal Trade Commission claims, that "advertiser and advertising agency know perfectly when they are engaged in illegal brinkmanship in exaggerating claims or falsely disparaging competitive products." In this period of hectic and violent competition, it is sometimes pretty difficult to know just where to stop and just when to decide not to meet competition.

Many people in this industry will admit that we need some new rules and some new enforcement of rules in advertising. The unscrupulous fringe, the coy practioners of false and misleading statements have grown too large for the health of this industry and for the public respect and confidence which the industry must have.

Industry objections to some aspects of the new FTC actions on advertising rest on a feeling that the Commission may move too fast and too abruptly for legitimate advertisers to make adjustments and to know just where they can go.

Again, Take Labels

Some cosmetic and perfume people are in a dither over new label rulings. These are not entirely new—

the question of foreign origin in package and label identification is an old one.

The FTC is clamping down hard on perfumers who perform some packaging or production operations in the U.S.A., but who also try to retain some identification with a foreign city, country or company.

Nearly all perfumers who import French perfume essences do some compounding and packaging here. Under this new ruling, because of the U. S. operation, the word "Paris" must be eliminated from both label and package. If the company or perfume name is French, and so considered misleading even though it is truly a branch of a French company and honestly French in origin and association, the label must nevertheless state, "Compounded in U. S. A." or equivalent words. "Imported oils compounded in the U. S. A." has been accepted in one case. But when any U. S. operation is involved, the product cannot either directly or by inference be called foreign or imported.

Chanel and Arpege have both anticipated this ruling by many years. The label of these two famous perfumes is a model of magnificent simplicity. There is no identification of any kind beyond the single word Chanel or Arpege.

The difficulty in this very strict ruling is more a problem for less well-known brands. Reputable and long-established French perfume companies like Guerlain, and French perfumes like Shalimar are at a disadvantage with U. S. companies who are purposely using France and Paris for promotion purposes. Guerlain, as are most other French perfume companies, is compelled to do some few operations in the U. S., for hard-headed economic reasons. Nevertheless, it is a French company with a French prod-

uct. This is substantially different from a purely U. S. company's promotion of a perfume made and packaged in France which constitutes less than 5 per cent of the total business said company does in that particular fragrance.

The recent announcement that the soft drink manufacturers would be required to declare on their labels the ingredients of their products is a bombshell in every proprietary packaging office. This order may not be as drastic as it sounds, and there are ways of ameliorating it; still, the minds of manufacturers who have a perfectly honest and legitimate reason, with no relation to public health, for maintaining a secret formula are not entirely eased.

In this competitive system of ours, a high percentage of packaged foods, soft drinks, candy, cosmetics, medicines and many other products have an apparent extra quality and competitive advantage that cannot be protected by patent but must be protected by secrecy.

For instance, in the tobacco industry, with cigarettes, cigars, pipe and chewing tobacco, a distinctive flavor formula is a unique quality establishing a difference among various competitive brands. The tobacco industry is one of the most secretive industries in America in regard to these flavor differences. Except for a limited number of supply houses who have long-established positions with the tobacco industry, the salesman of an outside flavor supplier can call for years on tobacco manufacturers and get a blank stare by the purchasing department plus the declaration, "We use no flavors of any kind."

The soft drink industry has largely been built up by secret flavor formulations, long held in shrouds of secrecy reminiscent of the stories of E. Philips Oppenheim.

A leading soft drink manufacturer, the envy of all the others because of the distinctive character of his famous drink, maintains a laboratory that can only be reached by a single elevator, which is guarded and locked as if it were a safe deposit vault. This laboratory is used by one or two highly confidential chemists for preparing one small but essential and secret part of the formula. The suppliers of important ingredients for the formula are also required to hold their information in confidence—only one or two men in the company know what is being made and what is being shipped. Each order and each shipment has a different code number and goes to a different place, and all correspondence to and from the company must be returned at the end of each year for destruction.

Some years ago, quite a story was circulated: one of the chief suppliers to this company, who, on his return from the city in which this company is lo-

(*Continued on page 226*)

Cultivating digitalis, for diseases of the heart, in Pennsylvania, Penna.

Current Sources of Botanical Drugs

BY EDSON F. WOODWARD
S. B. PENICK & COMPANY

Mr. Woodward, who has traveled widely investigating sources of botanical drugs for his firm, discusses these sources and the influence upon them of current events.

Granted that the number of botanical drugs in the USP and NF is decreasing, we should remember that such drugs as cortisone have come into the USP, and this drug, for example, is often produced from steroids found in the Dioscoreas. Imports of these steroids from Mexico grew from $300,000 in 1948 to over $3,000,000 in 1957—an increase of ten times in ten years. Today the annual sales volume of steroid drugs has passed the $100,000,000 mark.

Plant steroids are but one example of drugs derived from plants that are not botanical drugs in themselves. For instance, atropine and other mydriatic alkaloids are now obtained from *Hyoscyamus muticus* and the Duboisias. Rutin is obtained from *Eucalyptus macrorryncha* leaves and khellin from *Ammi visnaga* seeds.

United States imports of botanical drugs and related materials last year totaled about $10,000,000, whereas the sales of finished reserpine products alone amounted to more than $30,000,000. These two figures demonstrate what is happening to the industry today and what can be expected for tomorrow. Another comparison: in the past ten years the annual sales of drugs from plant sources have risen from $50,000,000 per year to over $250,000,000.

The reasons for these increases?

Most of the larger pharmaceutical companies have screening programs for the investigation of new botanical drugs and, consistent with industry practice, a goodly percentage of these sales dollars are being plowed back into research. Beyond this, programs are being carried out by universities and government and private research institutions.

Much of the impetus for these developments can be traced back to the investigations of several new drug sources—mostly within the past ten or 15 years —*Sophora*, *Strophanthus*, *Ammi visnaga*, *Veratrum*, *Dioscorea*, *Rauwolfia*, and *Vinca*.

A definite revival of interest in plants as possible sources of new drugs is evident. Now, to see what has happened to some of the older, more familiar ones, and to the industry itself.

The predecessor of this magazine was *Drug Markets*, the last issue of which appeared over a quarter of a century ago. Back in those days, which many of us never knew or have long since forgotten about, there were three drug markets: Hamburg, London and New York.

What has happened since then? The German Empire has come and gone; the Third Reich, too. In the old days, a number of drugs came from Germany, but today there are just a few, like angelica root and valerian; while, over in the next field, another chemical plant is being built.

Down Mincing Lane in London, there was once a regular thriving curb exchange for botanicals. The colonies sent in their cargoes, and they were traded and exported all over the world. World War I changed things somewhat. Then, in World War II, the British fire-bombed Hamburg and the Nazis buzz-bombed Mincing Lane. Now, 15 years later, both of these cities have been built anew and, in the meanwhile, New York has become the central market.

But here in New York things have changed, too. The emphasis has changed from using whole and milled drugs to taking advantage of their extracts and alkaloids. It is a matter of convenience, economy, and developments in dosage forms.

See what has happened to the seldom-heard-from annual Plant Science Seminar—once attended mostly by pharmacognosy professors. Two years ago the group was formally reorganized as the American Society of Pharmacognosy. Its publication is *Lloydia*, and the first issue vividly portrays the modern concept of pharmacognosy with full and proper emphasis on phytochemistry.

Separating and drying cocoa beans theobromine source, in Costa Rica.

Another example of these changing times can be seen down in the Blue Ridge Mountains, the wild herb garden of America for more than 100 years. The whole South is changing—Oak Ridge, the T.V.A., the book printing industry, and the cotton mills and textile finishing plants all have had their effect. Nowadays, farm children and womenfolk are not all that interested in collecting a bagful of mandrake root or cherry bark for just a few pennies.

Still another example is what has happened in Iran. During the past ten years the price of tragacanth in Persian markets has gone from around 330 rials per kilo to over 500 rials. During that time their export price index similarly climbed from 600 to 950 and the cost of living index rose from 800 to 1500. Meanwhile, the price in New York of a grade of powdered tragacanth that used to sell for 85 cents is only $1.15 today.

The cultivation of drug plants is not always a solution to the problems of price and availability. This is not the place for a lengthy discussion, but a few points can be mentioned.

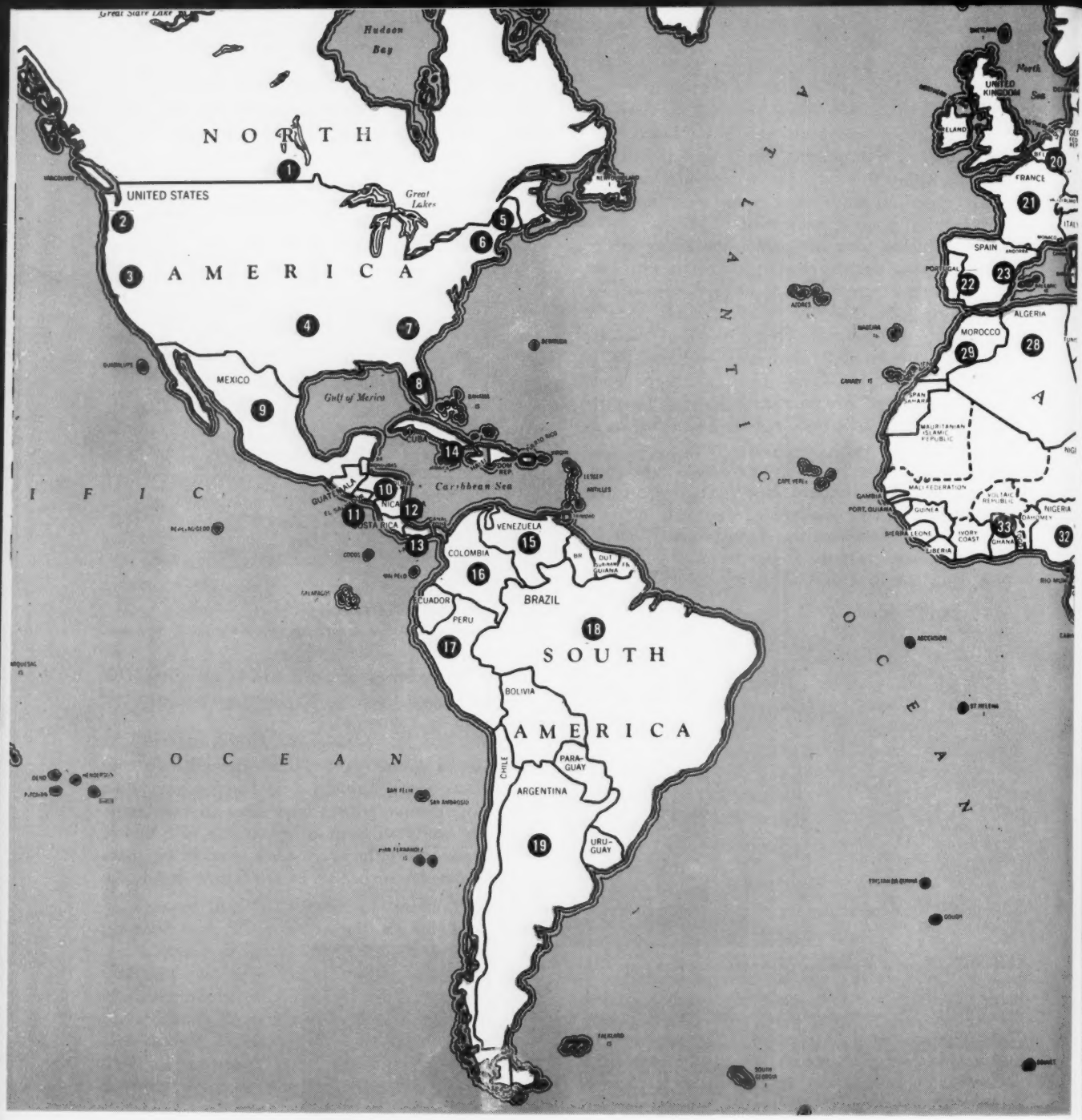
Collecting gum Arabic, used as a vehicle for other drugs, in the Sudan.

Aconite can be cultivated—witness the monk's hood of the flower garden—but the alkaloid content is very low. Rhubarb and licorice have been tried in California, but the labor costs are exorbitant. How can American farm labor compete with that of the Balkans where the licorice is a weed in the fields and the roots are turned up by the farmer during the spring plowing?

Pounding cincona bark for quinine, the antimalarial specific, in Java.

Nevertheless, some drug plants are cultivated in the United States, including digitalis, belladonna, hydrastis, wormseed, ergot, the mints and some ginseng.

(*Continued on page 242*)



NORTH & CENTRAL AMERICA

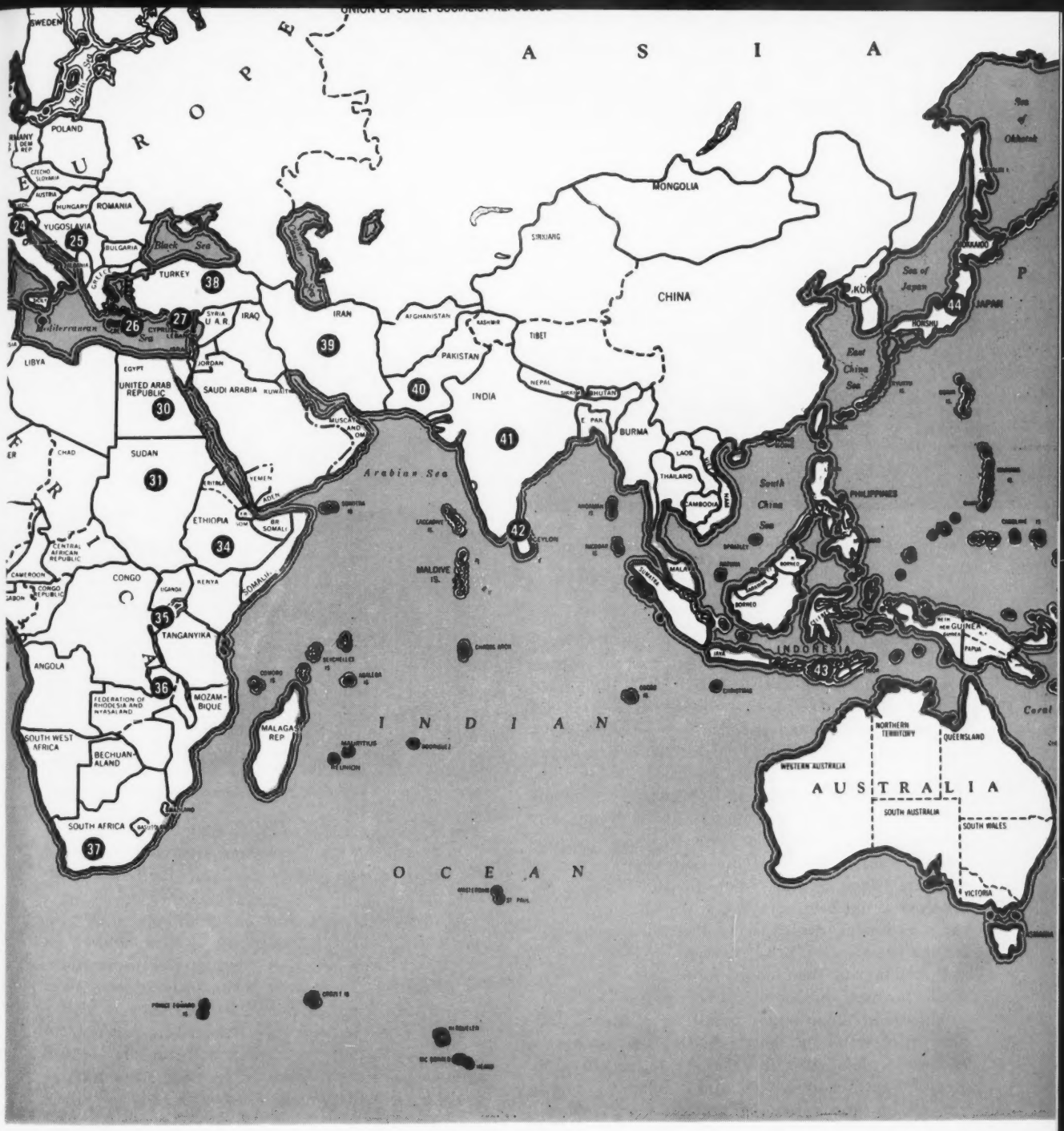
1. **Manitoba, Canada.** Senega
2. **Washington State and Oregon.** Cascara
3. **California.** Grindelia, Yerba Santa
4. **Kansas and Oklahoma.** Serpentaria Root
5. **New York State and Vermont.** Green Hellebore
6. **Pennsylvania.** Digitalis (cultivated)
7. **Kentucky, Tennessee, North Carolina and South Carolina.** Podophyllum, White Pine Bark, Wild Cherry Bark, Black Haw Bark, Golden Seal Root, Lobelia, Sassafras
8. **Florida.** Palmetto Berries
9. **Mexico.** Jalap Root, Scammony Root, Sarsaparilla, Dioscoreas
10. **Honduras.** Styrax, Sasparilla
11. **El Salvador.** Balsam Peru
12. **Nicaragua.** Ipecac
13. **Panama.** Ipecac
14. **Jamaica.** Quassia, Nutmegs

SOUTH AMERICA

15. **Venezuela.** Aloes
16. **Colombia.** Ipecac
17. **Peru.** Cochineal, Cinchona
18. **Brazil.** Copaiba Balsam, Jaborandi, Ipecac
19. **Argentina.** Stramonium, Chamomile Flowers

EUROPE

20. **Belgium.** Valerian Root, Angelica Root, Henbane
21. **France (South).** Gentian
22. **Portugal and Spain.** Ergot, Lo-



cust Beans

23. **Spain.** Aconite
24. **Italy (North).** Colchicum
25. **Yugoslavia.** Chamomile Flowers
26. **Crete.** Gum Mastic, Locust Beans
27. **Cyprus.** Locust Beans

AFRICA

28. **Algeria.** Fenugreek Seed
29. **Morocco.** Coriander, Colocynth, Sandarac, Fenugreek
30. **Egypt.** Senna, Henna, Hyoscyamus muticus
31. **Sudan.** Gum Arabic
32. **Nigeria.** Kola Nuts
33. **Ghana.** Cocoa
34. **Ethiopia.** Gum Myrrh, Gum Olibanum
35. **Congo** (Rauwolfia vomitoria), **Uganda and Tanganyika.** Papain
36. **Nyassaland.** Strophanthus
37. **Union of South Africa.** Buchu, Aloes

ASIA

38. **Turkey.** Styrax, Licorice, Opium
39. **Iran.** Quince Seed, Tragacanth, Licorice
40. **Pakistan.** Guar Gum, Ephedra
41. **India.** Henna, Psyllium, Gum Karaya, Nux Vomica, Pepper, Turmeric Root, Ginger, Senna, Rauwolfia serpentina, Rhubarb, Opium
42. **Ceylon.** Papain
43. **Indonesia.** Sumatra Benzoin, Cinchona
44. **Japan and Korea.** Agar Agar

ALL PHOTOS COURTESY L. A. CHAMPON & CO., INC.

A geranium plant in France. The oil is used extensively in perfumery.

GERANIUM OIL PRICE DECLINES

BY HARRY G. KELBLY

Geranium oil is one of the most important essential oils in perfumery, with production and consumption well up among the top group. It is of current interest not only because of the recent sharp price decline in Reunion oil, but also because of the various factors that are likely to influence the future trend.

Geranium oil is produced in various parts of the world, including France, Italy, Algeria, Kenya and Morocco, but by far the greatest source of this irreplaceable oil comes from the southwestern part of Reunion Island in the Indian Ocean. The last Reunion crop has been reported as 25 tons in excess of early estimates, which is undoubtedly responsible for the present easy price position.

Production in Reunion is undertaken entirely by small farmers, probably 150 or more. The oil is produced in small stills requiring a considerable amount of water for the condenser. This presents a serious problem, since the plantations are located on steep hills which even carts find it difficult to negotiate. Water must often be brought from long distances and is so precious in the distillation process that even the condensate is carefully collected and reused.

The farmers sell their oil to middlemen, mainly Chinese, who are shrewd traders. Advances to farmers are often made, so that the middleman is pretty much in control of the situation at all times. He, in turn, sells to exporters who ship the oil abroad via Saint Denis, the capitol of Reunion.

Exports of Reunion geranium oils to France are far larger than to any other country. As an example, shipments from January through May 30, 1961 amounted to 75 tons, which went—large for that period—mainly to France. In comparison, about 18

Field of geranium in France. Reunion Island is now chief oil source.

tons was shipped to the United States. From January through April 1959, shipments amounted to 53 tons and from January through April 1958, about 40 tons.

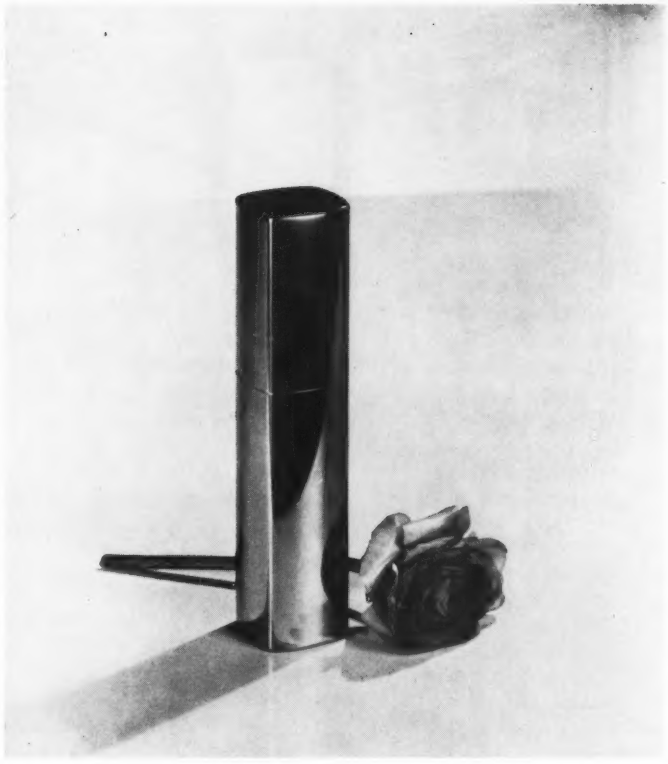
The United States does buy additional geranium oil from France. Although it is often altered in France by the addition of lower grades of geranium oil, this is not considered particularly serious when the addition does not exceed 10 per cent.

Algeria was at one time the leading producer of geranium oil, but now ranks low, primarily because interest has been transferred to other crops such as

(*Continued on page 237*)

A geranium still on Reunion Island. Its output may be no more than a few kilos a day, after two distillations and backbreaking cultivation.

Packaging and Selling



Germaine Monteil's new, slim, gold-tone flacon, which holds one and one-third ounces of Eau Concentree. Called the Weekender, it has a lightweight outer case of highly polished, lacquered aluminum, with the name "Monteil" stamped on the top of the cap. The sleek package, which was manufactured by The Risdon Manufacturing Company, fits snugly over a glass container holding the fragrance. The package is 5 5/16 inches tall and 1 3/16 inches square. Three Monteil fragrances are available in the Weekender: Fleur Sauvage, Nostalgia, and Laughter.

Our big three in cartons meet everyday at Olin

The big three in cartons are the graphic designers, the structural designers and the printers. Olin has made them even more important by bringing them together under one roof. The continual interchange of ideas possible at the Olin Carton Service not only produces better cartons, it avoids any of the many mistakes that can happen when Creative is three states away from Structural, and Printing is in another time zone.

The cartons turned out by Olin's centralized (and talented) staff are made of Omnikote, the strongest board in the industry. They are printed by one of the most advanced printing establishments in the world. And they are graphically designed to do the job of flagging down the nearsighted housewife who's left her glasses home. So if you're having trouble with cartons, tell us about it. Olin's big three probably have the answer.

PACKAGING DIVISION Olin

FOREST PRODUCTS OPERATIONS, P.O. BOX 1225, WEST MONROE, LA.

The Packaging DIRECTOR

BY FRED T. PICKERELL
DIRECTOR OF PACKAGING, REXALL DRUG COMPANY

Administering packaging is a full-time job.

No marketer can deny the role that packaging has taken in today's merchandising efforts, nor of its place in the economy. We all know that the tremendous frozen food industry and the growing aerosol industry are possible only because of new packaging materials and techniques. The luxury cosmetic market that has contributed so wonderfully to the beauty and well-being of the American woman, and to the profits of many large companies, is a direct result of good packaging.

But the full benefits of this media can be obtained only if it is used carefully and intelligently. The contribution of good packaging to the success of a merchandising operation is as easy to find on the shelves of our markets as are the examples of products doomed to failure because of the haphazard way they are presented to the buying public. As in all forms of competition today, the race goes not necessarily to the swift; rather, it goes to the thoughtful planner who has carefully evaluated his course and program before the starting gun sounded. Because I believe this so completely, I present here my plea to marketing executives that you include your packaging developer in your earliest considerations of a new product or a new market, whether he be in your own organization, or brought in from the outside.

All too often we packaging developers are invited to discuss the packaging of a new product after all other plans have been completed. We are told the marketing category we are to fit into. We are generally given a pretty firm idea of how much money we can spend. And we are given a target date that eliminates consideration of anything but a new version of the same old tired packaging forms. Our job could be done by any casual flipper of manufacturers catalogues and devote of Caslon Bold type with Italics for emphasis. On the other hand, I have seen the suggestions of the packaging man result in a complete change of merchandising plans. I have seen good packaging open up entirely new markets and I've seen it upgrade products to a higher price level, or show economics that have made mass marketing possible. Packaging is every bit as important to the success of your product as advertising, and it can mean as much of an investment. Most of you have learned to bring the agency men into your earliest plans—try bringing your packaging man in just as early.

I think most marketers are convinced that we package designers do our work between the seventh and eighth races at Santa Anita, which is why it takes so long to produce a new container. I assure you this kind of development work doesn't pay enough to support the ponies! So let me take you along some of the steps involved in the right way to bring about the container that is going to put your product into every home in America.

I believe the logical stages of developing a new package can be outlined as they are on the following chart.

STAGES IN DEVELOPING A PACKAGE

I Preliminary discussion.
- A. Outline of basic objectives
- B. General selling price area
- C. Information about competition
- D. Volume expected

II Initial investigation and development
- A. Packaging department plan of action
- B. Consultation with outside sources
  1. Consultants
  2. Suppliers
  3. Relations with trade associations
  4. Preparation of presentation to marketers

III First presentation
- A. Selection of most promising ideas for further study
- B. Suggestions for refinement of ideas
- C. Market testing and research consideration

IV Detailed development of best ideas
- A. Specific costs developed
- B. Investigation of final manufacturing and production considerations
- C. Laboratory tests
- D. Exact time factors involved

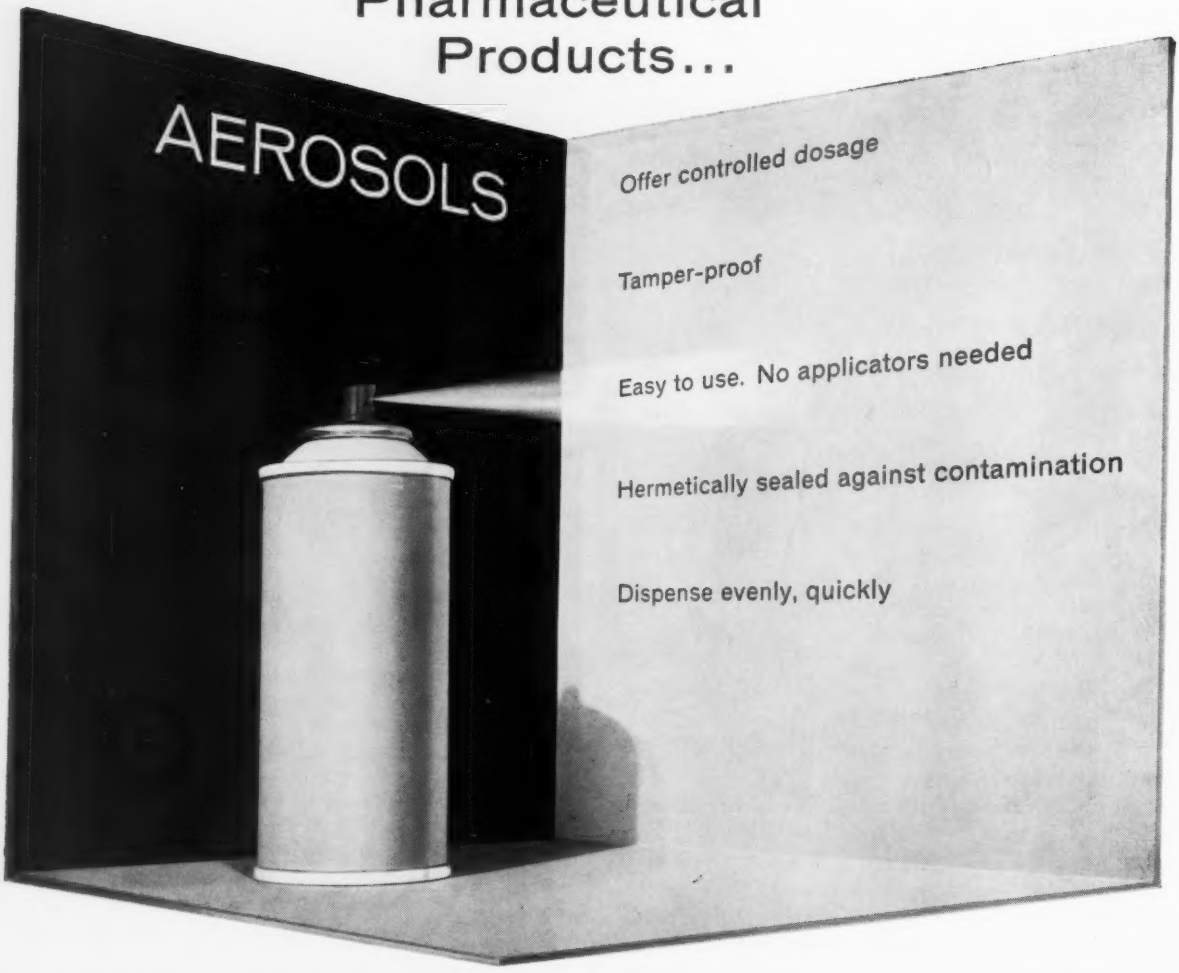
V Final selection by marketing and management

VI Final development
- A. Specifications
- B. Finished art
- C. Follow-through

During the first, preliminary discussions about the new product, your packaging man is going to be very

(*Continued on page 196*)

New Look for Pharmaceutical Products...



These are just some of the reasons for the successful new look in proprietary and ethical drug packages. Aerosol packaging improves product performance . . . makes pharmaceuticals more appealing . . . easier to use. That's why many drugs which formerly went to market in conventional packages now appear in aerosol containers. *Aerosol drug sales are climbing fast—and the market potential hasn't even been scratched!*

Now is the time to look into your share of this surging market. It's time to consider what the advantages of aerosol packaging can do for *your* product's sales. General Chemical would like to help. As a leading producer of aerosol propellants we can provide valuable technical data and latest market information. We can also direct you to experienced contract fillers for test-marketing and full-scale production.

For information, write to "Genetron" Dept., General Chemical Division, Allied Chemical Corporation, 40 Rector Street, New York 6, N. Y.

genetron®
aerosol propellants

Putting the "push" in America's finest aerosols

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N.Y.

Packaging and Selling

The 14th Annual Breck Survey for the market for hair preparations is now completed. Here are some of the conclusions:

Four out of five American women have one or more hair problems that may be controlled or corrected by hair care preparations.

The problem with the highest incidence, with 39 per cent of the women surveyed reporting it, was dandruff.

Lack of hair manageability was specified by 32 per cent of those surveyed, followed by 31 per cent who stated their hair was too dry.

Some further complaints: 21 per cent reported their hair lacks luster, 18 per cent that it falls out, 14 per cent that it is too oily and 7 per cent that their hair won't hold a permanent wave.

Younger women, or those under 35, had the greatest number of hair problems with 90 per cent of this group listing one or more undesirable hair condition. Dandruff leads, that is, 53 per cent complained of it, and 20 per cent of oily hair.

Women over 55 had 10 per cent fewer hair problems than younger women, with a major complaint being lack of manageability (37 per cent) and hair dryness (40 per cent).

There was some degree of natural grey in 70 per cent of the women surveyed. Among women aged 35 and under, 31 per cent admitted to some greyness.

Only 12 per cent of those surveyed made some purchase of hair preparations in beauty salons.

As a corrective for dandruff, 51 per cent of the women use a special corrective shampoo or rinse. In this group, a dandruff shampoo was favored by 27 per cent, while 24 per cent use a dandruff rinse. However, 34 per cent depend on their regular shampoo, while the remaining 15 per cent used some other form of treatment, including a doctor's prescription.

An interesting part of this survey shows that a personal recommendation, that is, somebody's suggestion, accounted for the majority of purchases of corrective preparations. For instance, in the case of dandruff shampoo, 38 per cent of the purchases were made because of another person's suggestion, while 23 per cent were prompted by advertising. In the case of dandruff rinses, 61 per cent of the purchases were based on somebody's recommendation and 15 per cent on advertising.

Hair coloring was tried at least once during their lives by 38 per cent of these women, and 29 per cent had used hair color during the past year. Of the total who had used hair color at any time, it was found that the middle aged, upper income, frequent beauty shop patron with some grey in her hair was the major user, and that a temporary color was most popular.

More freedom in allocating co-op advertising money has been ruled by the Federal Trade Commission. In this ruling, food chains are not required to spend advertising allowances exclusively in measured media.

In a decision involving the use of co-op money obtained by Giant Food Inc., the Commission stated that the Robinson-Patman Act prohibits payments in excess of their cost or value, but does not interfere with allowances which bear "a reasonable relationship between the payments and the services being rendered."

This case goes back to an anniversary sale by the chain in 1955. At that time the chain had 28 stores doing a $60 million business annually. One hundred and fifty suppliers were persuaded to contribute $38 thousand of which $15 thousand were spent for newspaper ads featuring products of the contributors, another $11 thousand for newspaper ads and radio-TV spots to publicize Giant Foods and its own private brands.

According to a recent newspaper column, 50 million Americans wearily whack off 500,000 miles of whiskers every morning.

In this operation a safety razor takes off 4 to 15 times as much skin as an electric razor. Most of this is dead skin.

A report of investigations by three Boston physicians, which appeared in the *Journal of the American Academy of General Practice*, found that a safety razor will shave closer, but, as an individual learns how to manipulate the electric razor, the difference in length of beard is "almost negligible."

It takes two to four weeks for the skin to become conditioned to the electric razor.

A safety razor gives an apparently "smoother" shave because the blade tends to slice the hair shafts at an angle and flatten them down with the grain.

An electric razor cuts the whiskers at right angles, producing a straight, more perpendicular growth.

The blunt cut accounts for the "shadow" effect in the heavy-bearded person.

According to quoted skin specialists, there has been no observable difference in hair quality, rate or profusion of subsequent regrowth from depilatories or from shaving.

Here is the story of a toothpaste tempest. The Federal Trade Commission has charged Lever Bros. with misrepresentation in claiming that Pepsodent is effective in removing smoke stains from the teeth of all smokers. Lever Bros.' lawyers have offered all sorts of evidence and witnesses to document Pepsodent's stain-removing powers on enamel, pulled teeth and teeth still in the mouth. They even cited reports by eminent dentists that any "mildly abrasive" dentifrice will do the job.

On the other hand, the F.T.C. claims that it is the tooth brush and not the toothpaste that gets rid of stains.

It seems to us that the F.T.C. has gotten itself involved in a weak case, and that it is a trivial argument that the cleaning is done by the brush. Dentifrice advertising has been a potent factor in getting almost all Americans to brush their teeth and to use toothpaste in the process. The fact that practically any toothpaste will remove smoke stains, since they all use a mild abrasive, ought not to mean that Pepsodent is misleading in making this claim.

A lot of people are taking a much closer look at the military PX stores since the Senate began investigating them. According to Senator Paul Douglas, the Defense Department has been "violating the law" in authorizing many of the 279 commissaries operated by the armed forces throughout the United States. These commissaries "give an unjustified subsidy to military personnel to whom they sell food and other goods at near-cost prices." He also reported that military stores sell food, household supplies and other goods at only 3 per cent above cost.

The PX is the most widely dispersed retail organization in the world. It is reported to deliver over 18,000 different items to points of purchase 10,000 miles from headquarters—the old Hearn's department store on 14th Street, New York City. Among all the chains, PX ranks in dollar volume just below Sears Roebuck, J. C. Penney, Montgomery Ward and F. W. Woolworth. The PX is said to have a world-wide volume in the U. S. and 30 foreign countries of $895 million and a U. S. volume of more than $400 million.

The PX stores are a very important factor in a number of cities. Prices range about 20 per cent below U. S. retail prices, although these PX stores earn an average of from 6 to 7 per cent and a total of about $50 million, which is used to support Army and Air Forces welfare and recreation programs. It is a huge customer for many local and national businesses and a great many of the PX personal services, for instance, laundry and watch repair, are owned and operated by independent local businessmen who operate on a concession basis.

Nevertheless, in certain places where Armed Forces personnel are numerous, it is severe competition or is considered severe, particularly in food.

Cosmetics that are safe enough to eat is part of the cosmetic future. At least, that was the prophecy of Dr. Glen J. Sperandio, Associate Professor of Pharmacy at Purdue.

The professor says that he has made a highly successful complexion lotion "made basically from peaches and cream," an anti-chapping cream "prepared mainly from tapioca," and, together with his assistants, he has also prepared a liquid makeup "composed chiefly of chocolate syrup and mashed potatoes."

Of course, this opens up a tremendously wide field. There is room here for research using scallion and garlic for making lipsticks and certainly spinach ought to come to the front with all sorts of possibilities.

The only thing that worries us about this new development in cosmetics is that if some leading manufacturer puts over the idea that cosmetics should be good enough to eat, then we will be faced with the highly complicated chemical job of eliminating the saturated fats, cholesterol and getting the calories down to a moderately low count.

This is a very deep problem that cosmetic chemists probably should be giving some thought to.

Don't ask us for any further information, but we read in a French publication that the ordinary snail from our gardens—and if you are a gardener, you know what we mean—may become an exciting raw material for cosmetics.

Some extracts from these creatures are used to provide cosmetic materials in the field of beauty products.

We would guess that a new therapeutic cream is on the way.

Selling by smell is certainly on the increase, according to reports of newspaper ads around the country. Just recently a full-page advertisement in four colors was published in the *Minneapolis Star and Tribune* featuring Captain's Fancy Brown coffee, a premium blend brand by Nash's Coffee Co., St. Paul, Minn. According to L. J. Clark, Nash's president, it was the first time a full-color coffee ad for newspapers had been printed with a coffee-scented ink.

A very interesting account of what can happen in the use of scented ink for advertising was related in *Editor & Publisher*. Here is what happened when the Seabrook Farms ran a full-page full-color strawberry-scented ad in the Levittown-Bristol (Pa.) *Times-Courier*. According to the local distributor for Seabrook Farms, this advertisement ran on January 25, 1961.

"When the ad arrived in the homes of subscribers, we experienced varied reactions. Those who liked the idea expressed pleasure in the colors and the novelty of the strawberry aroma. Those against the scented ad found the aroma too strong and unpleasant."

He said the explanation for the strong strawberry scent was simple.

"On the evening of January 25th, the temperature was eight degrees above zero, allowing for practically no escape of aroma while the paper was in the process of delivery. Once in the heated homes of subscribers, however, the aroma was released full strength. Had it been a normal degree day, the aroma would probably have been more pleasing to those who did complain."

Sales results, however, were very satisfactory.

Just why it has taken so long for the cosmetic industry to move over from the women's market to the men's market in hair coloring and hair tints is a mystery.

Everybody knows, and plenty of surveys have proved beyond question, that a high percentage of men, perhaps not quite so high as that of women but enough to make a tremendous market, are concerned about gray hair.

We have had, in the past, some slight and feeble attempts to approach this market for men, but no concentrated drive with a specific product for men and specific advertising directed to men has yet developed.

We remember quite a good number of years ago, certainly 20 or more, when one man of our acquaintance made a pretty decent living selling just one product, namely, a selection of hair crayons, to just one store, Macy's. These crayons were used exclusively by men to touch up the gray hairs around the ears. Incidentally, 80 per cent of these crayons were bought by women.

Cove Vitamin & Pharmaceutical Co. has reputedly set aside $150,000 to test market Heglo, a product designed to restore gray hair to its original color. This is a 4-oz. product in a polyethylene container said to be easy to apply, an invisible, greatless tonic devoid of dyes and tars with a clean, masculine aroma, to retail at $3.95.

The Delson Candy Co.'s packaging for its thin mints has been in the court for a second time and has now won a resounding victory.

This package has been subjected to a determined assault by the Food and Drug Administration as a test case for deceptive packaging—slack fill.

In the first court case, a great deal of money was invested in witnesses, both by the defense and the prosecution. Exhaustive retail and consumer surveys were made and experts of various kinds were ordered to appear.

The Delson Co. won that case but it was appealed, and now they have won again.

In this second ruling, the court said that Delson's package was not misbranded or misleading within the meaning of existing law, and ruled that, in this case, the law was "unconstitutional, vague, indefinite and uncertain, and contravenes the due process clause of the fifth amendment."

This sounds pretty legalistic but the real facts, which make this important to packaging, are that the judge went thoroughly into Delson's method of packaging, shipping and whole packaging history, and then reiterated his ruling that Delson had acted "in good faith with no intention to deceive."

The FDA has argued that the mints were deceptively packaged, in too large a package, with too many fillers, etc.

It is clear that Delson's contention that the package was designed to give full protection to the product and not to deceive the public, is what impressed the court.

In view of the testimony before a Senate sub-committee in Washington now being presented on packaging, this Delson decision seems to us like a breath of fresh air.

We have received some very useful surveys this month.

The magazine *Sports Illustrated* has just issued its third national study of drugs and toiletry brands.

The 1961 Consumer Analysis, which includes family brand preferences for drugs and cosmetics, has just been issued by the Wichita *Eagle and Beacon*.

The advertising agency Doyle Dane Bernbach Inc. of New York has issued a new study by E. B. Weiss called "The Coming Era of Giant Leased-Department Chains." According to this study the leased department is due for a lot of big impetus: many established chains are beginning to turn to the concessionaire because some of their newer departments have been doing poorly. For instance, some food supers are leasing the drug and cosmetic department in places where their own operation has not been satisfactory and where they are not content to deal with the rack jobber.

Helene Curtis has joined the growing group of cosmetic companies who are building up their drug divisions.

A new product is being market tested, a new effervescent stomach remedy—Buffa Vess.

A Swedish toothpaste seems to be making a considerable dent in some parts of the Middle West. The introduction has been through newspapers and the territory of this newspaper has been worked with real intensity.

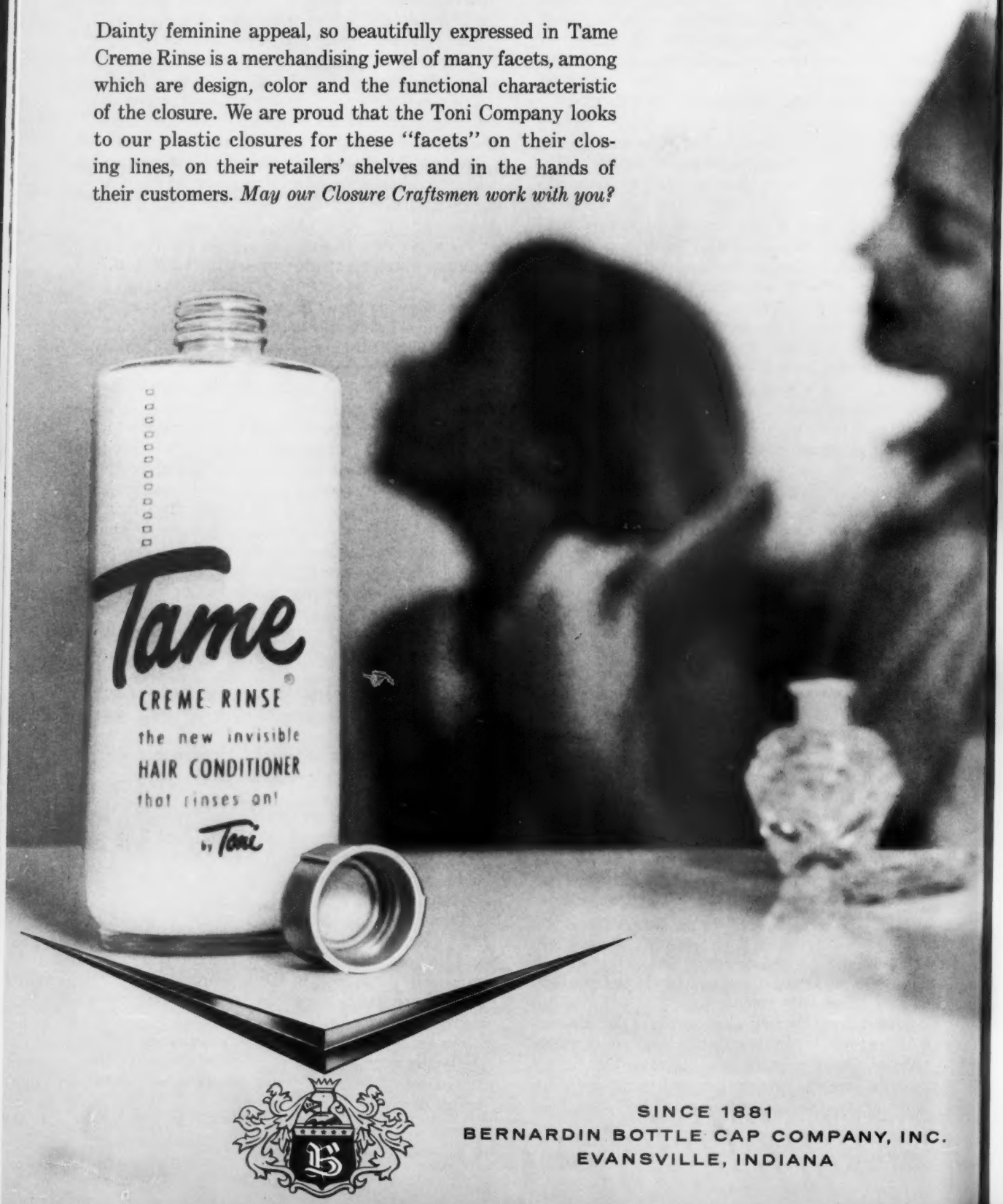
According to an advertisement in the *Minneapolis Star and Tribune*, drug wholesalers say that the new toothpaste is their top seller, and it is also selling along with the leaders in the supermarkets.

Newspaper advertising has been used for three insertions a week.

The name of this toothpaste is Vademecum and it pleases us very much to see a copy writer for the *Minneapolis Star and Tribune* calling this a curious foreign name. •

BERNARDIN closures keep good company!

Dainty feminine appeal, so beautifully expressed in Tame Creme Rinse is a merchandising jewel of many facets, among which are design, color and the functional characteristic of the closure. We are proud that the Toni Company looks to our plastic closures for these "facets" on their closing lines, on their retailers' shelves and in the hands of their customers. *May our Closure Craftsmen work with you?*



SINCE 1881
BERNARDIN BOTTLE CAP COMPANY, INC.
EVANSVILLE, INDIANA

PHOTOGRAPHY BY DICK BOYER

NEWS IN PACKAGING...

1. **Orlane**'s new lipstick case with a basket-weave finish, in gold and black.

2. **Parfums Jacques Fath** is introducing a new ¼-oz. purse atomizer with a metered spray—a tapered gold column with fluted sides and smooth-finished top and base. Suede on hinged box distinguishes fragrances by the individual colors.

3. **Spatz Laboratories** have developed a new line of automatic eye and lip pencils with a sharpener head injection molded of Implex high-impact acrylic plastic by Rohm & Haas in the pencil cap. Pencils are sharpened by rotation and slight pressure. Chips are held in top of pencil until removal. The plastic has dimensional stability, strength and stain resistance.

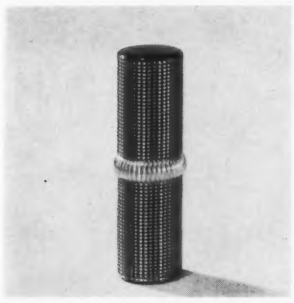
4. **Container Corporation of America,** working with **Avon Products, Inc.,** devised automatic equipment to handle cloth ribbon at high speed to form the carton for Avon's "First Prize" men's toiletries using modified Jones CMV cartoners. Decoration is Mylar gold leaf medallion with twin tips of red ribbon. Container Corp. supplies the sleeves, shippers and cartons, trade-named "Ribpac."

5. **Lermer Plastics, Inc.,** has a complete line of both clear and emerald green plastic capsule vials with plastic screw caps available in 8 sizes: 5, 7, 10, 12, 14, 20, 30, and 40 dr.

6. Strip labels for easy removal by druggists are utilized by **Upjohn** for its Mycitracin ointment, which comes in a Sheffield collapsible metal tube. Labels have same finish as that of regular tube printing.

7. Blister packages for **Abbott Laboratories'** tablet samples thermoformed by Plastofilm, Inc. of Eastman's Tenite butyrate extruded by Campco, which serves as a bottom tray or receptacle for three hinged boxes held in place within a cutout area of the paperboard backing.

8. **Abbott Laboratories'** corporate design program includes its big drums for bulk chemicals. The new trademark is a strong abstract "A" in any one of 11 colors.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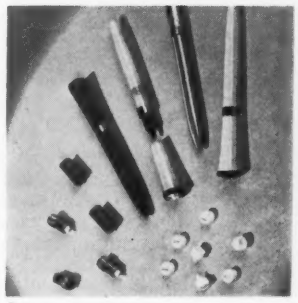
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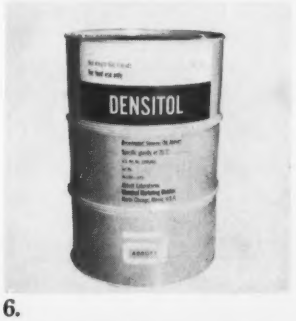

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8.

Skin Packaging Film

Skin pack polyethylene, a 3-mil self-adhering film by the Flexible Packaging Division of Continental Can Company, bonds with strength, gloss and transparency to uncoated board by adhering to the individual paper fibres, providing significant savings in materials costs.

Flexible Acetate Containers

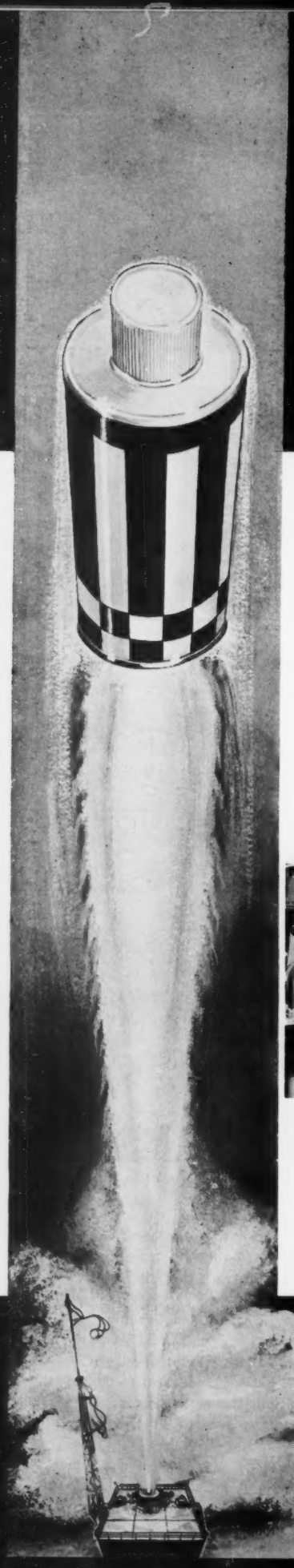
A new line of clear, flexible acetate containers in diameters from ¼ to 1¼ inches, and lengths up to 7 inches, with tight fitting and easily removable molded polypropylene closures, is now available from Lermer Plastics, Inc.

P. I. Checklist

A checklist for carded packaging prepared by the Hardware Packaging Committee of the Packaging Institute, is available for 25 cents from the Institute.

Aerosol Development

Crown Cork & Seal Co.'s Crown Spra-Clad 16-oz. aerosol can has an internal coating system especially effective for fabricated aerosols. First, in addition to coating in the flat prior to fabrication, the can is coated internally after the body has been formed in the round, which eliminates interior coating scratches.



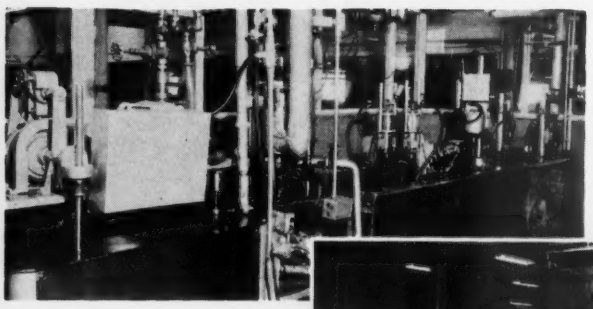
Put YOUR new aerosol product *in orbit* the easy way —on OUR INVESTMENT

Costing more than you expected to introduce your new aerosol product or to manufacture established products? You can reduce your capital requirements tremendously by utilizing FLUID'S contract aerosol filling service. Extraordinary formulating and storage facilities are also available according to your needs—thus relieving you of the entire manufacturing and filling process, if desired.

FLUID owns and operates two of the largest and most modern contract liquid and aerosol filling plants in the country, with seven filling lines. Quality control here is more than a mere catch-phrase. Quality control inspectors are stationed at various points on filling lines. In addition, roving inspectors make frequent checks of samples taken at random.

A completely equipped laboratory and skilled technical staff are capable of formulating your product for liquid, spray or foam dispensing, as may be indicated. An eight-car railroad siding, multiple shipping dock, complete warehousing and handling facilities accelerate deliveries.

Send for further information regarding the complete FLUID contract filling service. Write or telephone Fluid Chemical Company, Inc., 370 Mt. Prospect Avenue, Newark, New Jersey—HUmboldt 4-1000.



One of seven filling lines in the FLUID Plant

The FLUID Plant has spacious warehousing with up-to-date handling equipment.

Packaged by

FLUID

Chemical Company, Inc.

MANUFACTURING CHEMISTS SINCE 1921
NEWARK, NEW JERSEY

NEWS and VIEWS

BY TED KLEIN PUBLIC RELATIONS DIRECTOR*

A.M.A. Show

To my recollection there has never been an annual session of the American Medical Association to compare with their recent five-day meeting in New York City. Since the New York Coliseum is within walking distance of my office, I visited the convention every day and walked through the four floors of exhibits often.

The pharmaceutical industry and allied trades interested in catching the doctors' eye and ear were there in full force. There were also hundreds of scientific exhibits manned by physicians who felt they had something to share with their colleagues.

As a firm believer in the value of institutional advertising and public relations, I find it difficult to explain some of the reason behind many of the elaborate convention displays at medical meetings.

Cases in point: Pepsi Cola and Coca Cola must have given away hundreds of thousands of free glasses of their soda to convention visitors. . . . There was a beautiful and romantic Dutch garden, complete with attractively dressed Dutch girls. . . . A pantomime commercial for a pharmaceutical firm was provided. . . . A very elaborate animated model of the brain showed how the senses and memory enter into perception.

Is it worth it? Is the medical convention as we now know it growing into a monster Barnum and Bailey show with the rather foggy idea that the biggest show is the best?

I believe that only one out of every three people who go to the convention are physicians; the others are relatives of doctors or paramedical personnel. The idea that exhibitors can meet hundreds of potential customers in a short time is the basic reason for the trade show. But where does reason end?

Thousands of children and their mothers and friends can't have any influence on the sale of prescription products. I asked several physicians after they had come out of booths if they could remember the name of the company sponsoring the booth they had just left—not all could. I asked a few if they could remember the drug that was detailed and what they could remember about the talk—they had some foggy ideas.

What is needed is an impartial study of the role of medical conventions in selling prescription products. Here are some questions such a study might well ask:

1. How many booths can the average doctor visit during the convention?
2. How long does he stay in each booth?
3. What does he get out of each visit.?
4. How important are samples of products?
5. Would he go to a strictly scientific convention without the Barnum and Bailey-like exhibits?
6. What is the most efficient way to detail a doctor at a convention?
7. How many conventions a year must a manufacturer go to?
8. How should a firm follow up convention contacts?

Upjohn Story

Summer reading should include Leonard Engel's book on The Upjohn Company, *Medicine Makers of Kalamazoo*, published by McGraw-Hill.

Mr. Engel has probably written more about medicine and drugs than most science writers in the country. Under his name over 300 articles in *Life*, *Harper's*, *Scientific American*, and the magazine section of the *New York Times* have appeared. He is also author of *The Operation*, an account of an open heart surgery operation, and was editor of *New Worlds of Modern Science*.

His latest 261-page book is worth reading for its documentation of how "only in America" a multimillion dollar pharmaceutical company started and became established. Engel tells Upjohn's history from its very beginning through to the recent developments in Kalamazoo. He chronicles their contributions to medical science with a finely developed style that gives excitement to an essentially documentary narrative. The people behind the products are drawn to life with a novelist's skill.

The book will help industry leaders to form a clear perspective of Upjohn and should be required reading for some of our critics who do not know what has gone into one of the leading pharmaceutical manufacturing firm's products.

I think that Engel's statement on the industry's point of view regarding competition is worthy of repeating here: "In competition for markets, the pharmaceutical industry and firms like Upjohn have not only found a demonstrably efficacious means of spurring their own growth, but also of providing an ever larger array of tools for restoring and maintaining health."

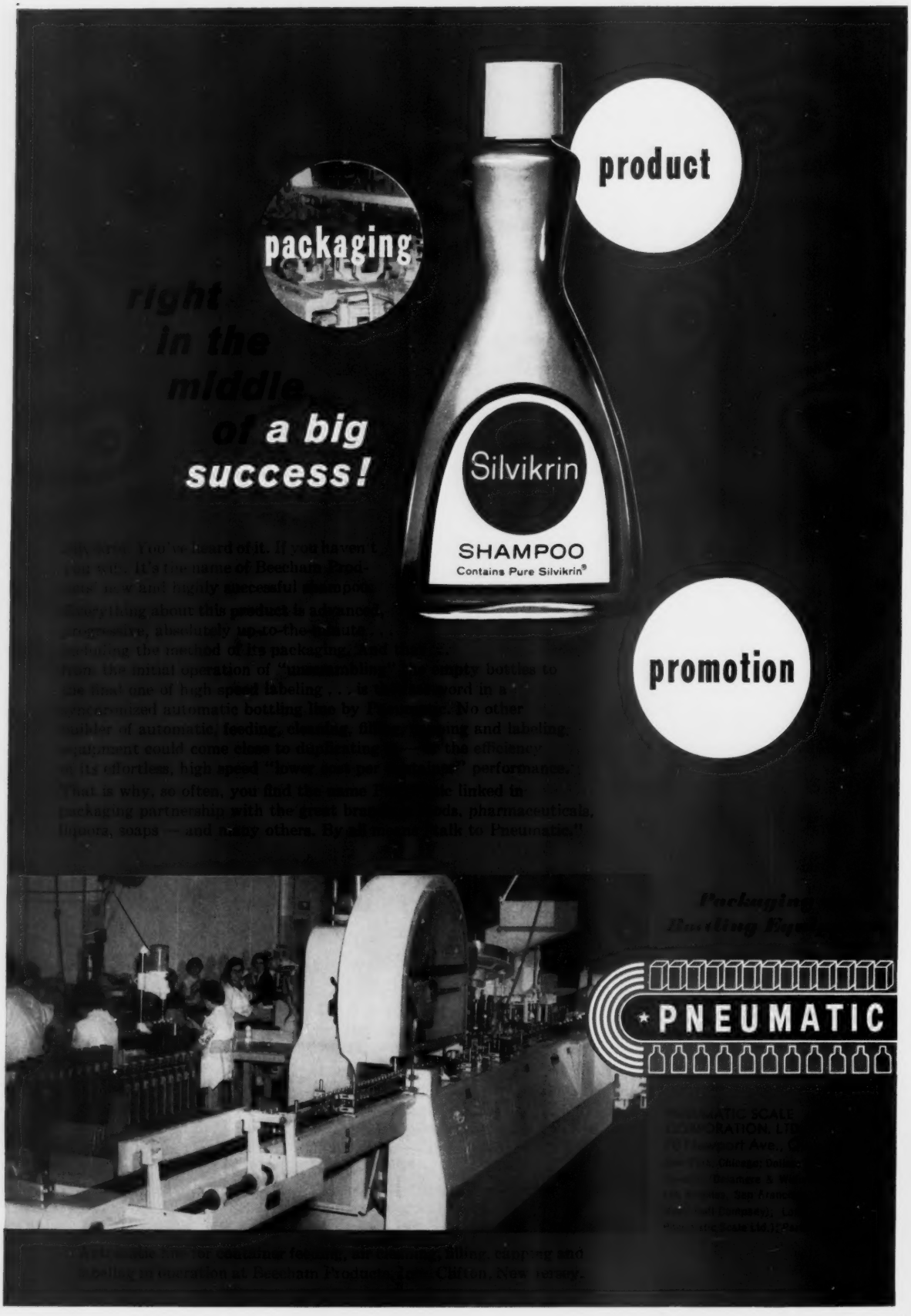
Do You Read Me?

In radio jargon, the above question is asked by one operator of another, to determine if his message is getting through. All too often, we in the communications business fail to ask a similar question. We don't know whom we are reaching, or whether they get our message.

William Strunk, Jr., a teacher at Cornell 40 years ago, wrote a handbook entitled *The Elements of Style*. Now E. B. White, an editor for *The New Yorker*, has had Professor Strunk's book republished. It is a must for anyone who writes.

Here are 21 of Strunk's admonitions to the would-be communicator:

1. Place yourself in the background.
2. Write in a way that comes naturally.
3. Work from a suitable design.
4. Write with nouns and verbs.
5. Revise and rewrite.
6. Do not overwrite.
7. Do not overstate.
8. Avoid the use of qualifiers.
9. Do not affect a breezy manner.
10. Use orthodox spelling.
11. Do not explain too much.
12. Do not construct awkward adverbs.
13. Make sure the reader knows who is speaking.
14. Avoid fancy words.
15. Do not use dialect unless your ear is good.
16. Be clear.
17. Do not inject opinion.
18. Use figures of speech sparingly.
19. Do not take shortcuts at the cost of clarity.
20. Avoid foreign languages.
21. Prefer the standard to the offbeat.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promotion
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DEODORANT
Ucon®
propellants
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New Products

PHARMACEUTICALS

Furacin-HC Urethral Suppositories (Norwich) contains hydrocortisone, is antibacterial, anti-inflammatory and anesthetic. It is for use following urethral instrumentation or surgery to decrease inflammation and formation of fibrotic strictures. Supplied in boxes of 12 sepositories, 1.3 gm. each, hermetically sealed in aluminum foil.

Z. B. T. Baby Lotion (Glenbrook) contains Zephiran, an effective antiseptic. The lotion retards the formation of ammonia in urine; provides deodorant and antibacterial action; helps in warding off urine scald; protects and helps clear chapping, chafing and diaper rash. It comes in a plastic squeeze bottle.

Neosporin (Burroughs Wellcome) containing Polymyxin B, Bacitracin, and Neomycin, is an antibiotic aerosol to combat superficial bacterial infections of the skin.

Quanti-Vita (F) (Hoyt) are pediatric multiple vitamins with sodium fluoride. Each 0.6 ml. of the pediatric drops provides 3000 U.S.P. units vitamin A, 400 U.S.P. units vitamin D, 60 mg. vitamin C, 1 mg. vitamin B_1, 1 mg. vitamin B_6, 10 mg. niacinamide and 0.5 mg. fluorine It is designed for nutritional support plus prophylaxis against future dental caries. Supplied in 50 ml. bottles with calibrated droppers.

Furacin Topical Cream (Norwich) with a water-miscible, vanishing cream base is indicated for skin infections such as impetigo. It may also be used to prevent or treat bacterial infections of post-operative wounds, especially in the anorectal area and after pilonidal cyst repair. Furacin Cream is packaged in a 28 gm. tube.

COSMETICS

Wrisley Bathenia Bubble Bath has been added to the company's toiletries line.

Cosmetiques Biotherm Creme Solaire is a water-soluble sun cream including a beauty treatment.

Revlon Ultima lipstick, Tangerique, is a new summer color.

Houbigant Eau de Cologne Tres Fine is a new cologne described as more lasting than other colognes. Available in Flatterie and Chantilly.

42 Products Breath of Roses is a perfume for the lips and mouth that has been added to the company's toiletries line.

Sulray Blem-Clear is a clear, medicated lotion for acne pimples, blackheads, and oily skin containing allantoin, aluminum chlorhydroxide, hyamine, and urea. It comes in a 2-oz. bottle.

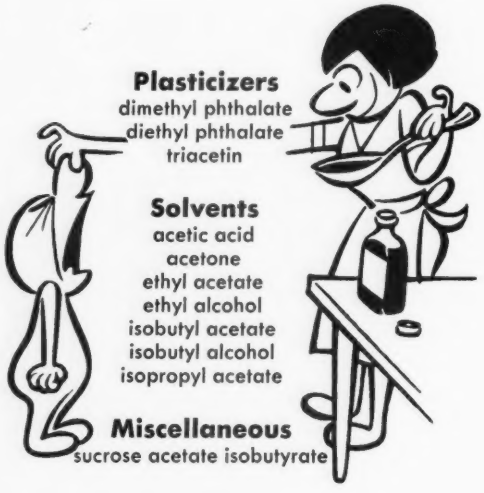
DeMert & Doughtery Koolz, a new aerosol spray, cools and relaxes hot tired feet. It is also used to cool fabric surfaces. •

For the manufacture of drugs and cosmetics

Chemical Intermediates
acetaldehyde
acetanilide
acetic anhydride
acetonitrile
benzoquinone
n-butyronitrile
crotonaldehyde
isobutyraldehyde
isobutyronitrile

Hemostatic Agent and Absorbent
oxidized cellulose

Antioxidants
Tenox® antioxidants for Vitamin A and such oils and waxes as paraffin, mineral oil and lanolin



Plasticizers
dimethyl phthalate
diethyl phthalate
triacetin

Solvents
acetic acid
acetone
ethyl acetate
ethyl alcohol
isobutyl acetate
isobutyl alcohol
isopropyl acetate

Miscellaneous
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- **SCIENTIFICALLY DEVELOPED AND MANUFACTURED— SPECIFICALLY FOR APPLICATION IN COSMETIC FORMULATIONS**

KNAPP FINE CHEMICALS PRODUCTS INC.
LODI, NEW JERSEY

(*Continued from page 177*)

interested in learning as much as he possibly can about your *real* objectives—what you hope to accomplish with this product—what pricing areas and segments of the market you are aiming at. Do you want to stress the luxury aspect? Or is economy your theme? What age levels do you think will be your best bet? What will be your normal outlets? How well do you plan to back it up with advertising and point-of-purchase promotions? He will also want to know as much as possible about your anticipated competition and how you hope to meet it. And, most important, what volume you anticipate this year, and hope for next year. How many mistakes in judgment have I seen made because only the first year's volume was considered! If you don't believe in the future of this product we shouldn't be going into it at all. So let us take advantage now of the things we can accomplish with the volume we are going to help you get two years from now. The difference between the cost of an 8-cavity mold and a 12-cavity mold, in the injection molding of plastics, is about $2,000. But the difference in unit price can be $10 or $13 per thousand units. Think about that.

Armed with this information, your development man will sit down with his entire background and, if he is fortunate enough, with his staff, to plan a course of action. It may surprise many of you, but his plan of action will almost always include consultation with others. He may want to call on an industrial or package design counselor; he may go to some of your regular suppliers for their specific knowledge; here is where his active membership in trade associations often pays off. But, no packaging director worth the title believes he has all of the knowledge, skill or creativity to evolve the best, all by himself. Whatever his course, trust him to explore all of his sources of potent ideas without endangering your plans. Most of us in the packaging fraternity have learned the value of the free exchange of ideas that can only result from complete respect for each other's integrity.

From all of these considerations he will gradually develop from three to six ideas worth further investigation. He will have a pretty good knowledge of the costs involved in each and the manufacturing and production problems each is liable to encounter. If he has doubts about product or package stability or compatability, he will have already started laboratory tests. He will have acquired models where practical, or samples or sketches. Often he will have accumulated competitive products. If he has any ham in him, as I do, he will even be starting to plan a little show for his presentation.

Perhaps, as I detail these steps, you will begin to understand why so much time is required even for this part of the presentation. The preliminary steps often require even more thorough investigation and discussion than the final ones. Almost never will one medium answer all of the problems, so the relation-

ship of the various media to each other must also be considered. A glass bottle is still sealed, for the most part, with a metal or plastic closure. Seldom are plastic containers sealed with the same kind of plastic. Before a package can be presented, the designer must be reasonably sure of the relationship of the basic container to the closure, of both of those items to the product, and of all them to the method of labeling, cartoning and shipping. And your package designer is reluctant to show you even preliminary ideas until he is reasonably sure of these aspects.

As soon as he possibly can, though, he will want to present these ideas to you, preferably at a full session that will include the merchandisers, the advertising people and research elements you may have at your disposal. He does not hope for, or even want, a final decision at this meeting. He does hope that further consideration will be narrowed down to two or three choices which can be more thoroughly investigated. This is the time for you, the merchandiser, top management, the people from the agency—whoever has a voice—to use it. Criticism now is a virtue. Later it will only foul up the works.

This is the time also to consider a little-known service the package developer can often render. Any significant departure from the traditional in packaging should be very carefully evaluated before it is made available to a remarkably unpredictable public. What seems wonderful to a small group can fall completely flat in the market. A number of years ago, in the East, after a new product failed spectacularly, the man responsible for the final design was forced to admit that, in the rush to get the work done, he had researched the proposed package design on a statistical sample of one—his wife. This conference has been devoted largely to a consideration of marketing research methods and some of the lessons learned here should certainly be applied to the evaluation of new packaging.

The problem is this: a completely new container will generally involve an investment of $10,000 or more in molds, tools, dies, printing plates and such, before any manufacturing can begin. However, in almost every case we are talking about multiple molds, or dies, or plates. But it is common practice to make only one segment of the over-all tool until the original mistakes have been corrected and the final details completed. At this point, only a few hundred dollars are invested so, if the idea is dropped, there is no great loss involved. Most manufacturers are reluctant to produce more than experimental quantities from these sample sections, but they *can* be talked into making up to a thousand pieces or so, which is generally enough for a fairly thorough research program. Similarly, labels and even cartons can be produced in small quantities at a reasonable investment. If you have allowed yourself enough time for a market or consumer study, avail yourselves of this opportunity to use fairly complete

(*Continued on page 211*)

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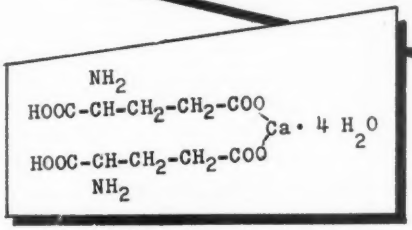
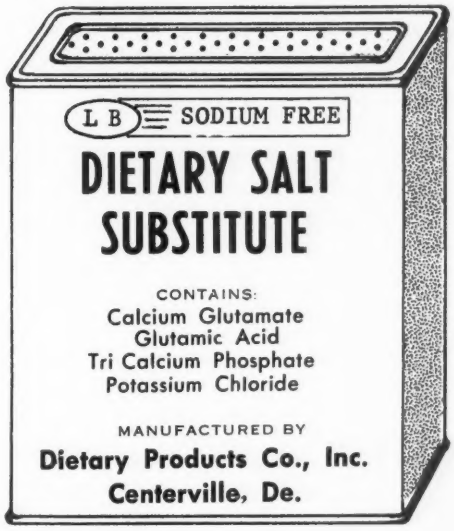
CALCIUM GLUTAMATE*



For Sodium-Free

Dietary Salts



New free - flowing Calcium Glutamate Lemke enhances natural food flavor, has no bitter, metallic after taste, does not cake and costs considerably less than Potassium Glutamate.

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NEWS

People . . .

Luis de Hoyos Elected President

Synfleur Scientific Laboratories, Inc., has elected Luis de Hoyos, previously vice-president, as president. The company was founded by

LUIS DE HOYOS

Mr. de Hoyos's grandfather, Dr. Alois von Isakovics in 1889, after whose death the business was carried on by his grandmother, M. Upshur von Isakovics as president, and his father, Luis de Hoyos, Sr., as vice-president. The new president has been with the firm since 1943.

Dr. Ballard Twice Honored

The Pharmaceutical Society of New York recently honored Dr. Charles W. Ballard, Dean Emeritus of Columbia University College of Pharmacy. He was elected honorary president in recognition of his outstanding contributions to the profession of pharmacy and to the Society. He also received the Pharmacy Study Award, presented by the New York Academy of Pharmacy.

First Squibb Fellowship Award

Mariano Guiducci is the first recipient of the annual Squibb Institute for Medical Research Fellowship Award. Mr. Guiducci, an organic chemist with an M.S. degree from Lehigh University, plans to take the doctorate at Columbia University.

Mallory Joins 25-Year Club

John H. Mallory, director of purchases for Fritzsche Brothers, has been elected to the company's Quarter of a Century Club.

Florasynth Honors Ross

Raymond Ross, a member of the New York sales staff of Florasynth Laboratories, Inc., was recently honored by the company after com-

RAYMOND ROSS

pleting 25 years of service. In a testimonial ceremony, president W. L. Lakritz presented him with a special gift to commemorate the occasion. Mr. Ross began with Florasynth in the Flavor Laboratory, and was later promoted to the sales department.

Leo Scott Marks Anniversary

Leo A. Scott, vice-president for manufacturing of the Colgate-Palmolive Company, is marking his 13th anniversary with the company. He joined Colgate's Kansas City plant as an assistant chemist in 1931.

Pharmacy College Joins Northeastern University

The New England College of Pharmacy will become part of Northeastern University, effective September, 1962, to be known as the Northeastern University College of Pharmacy. Northeastern will acquire the building, facilities, and equipment of the present New England College of Pharmacy on Mt. Vernon Street, Boston. The independent College has an enrollment of approximately 260 students and is fully accredited.

After consolidation, the College of Pharmacy will be administered on the Co-operative Plan of Education, whereby the required internship for pharmacy students can be accomplished during the co-operative work experience. Plans are currently being made to locate the College on the Huntington Avenue campus.

Arneson Takes Leave of Absence

Harold D. Arneson, president and general manager of the Abbott Laboratories overseas subsidiaries, is taking a leave of absence for reasons of health. Mr. Arneson has been associated with Abbott for the past 28 years.

Edward A. Ravenscroft, executive vice-president, will serve as acting president.

Retirements

George R. Manz has retired from Abbott Laboratories after 43 years of service. He had been assistant treasurer of the company since 1945. Mr. Manz started with Abbott as a bookkeeper.

Lester E. Francis, director of advertising for Emery Industries for the past 18 years, has retired. Mr. Francis joined Emery's Chemical Division in 1927.

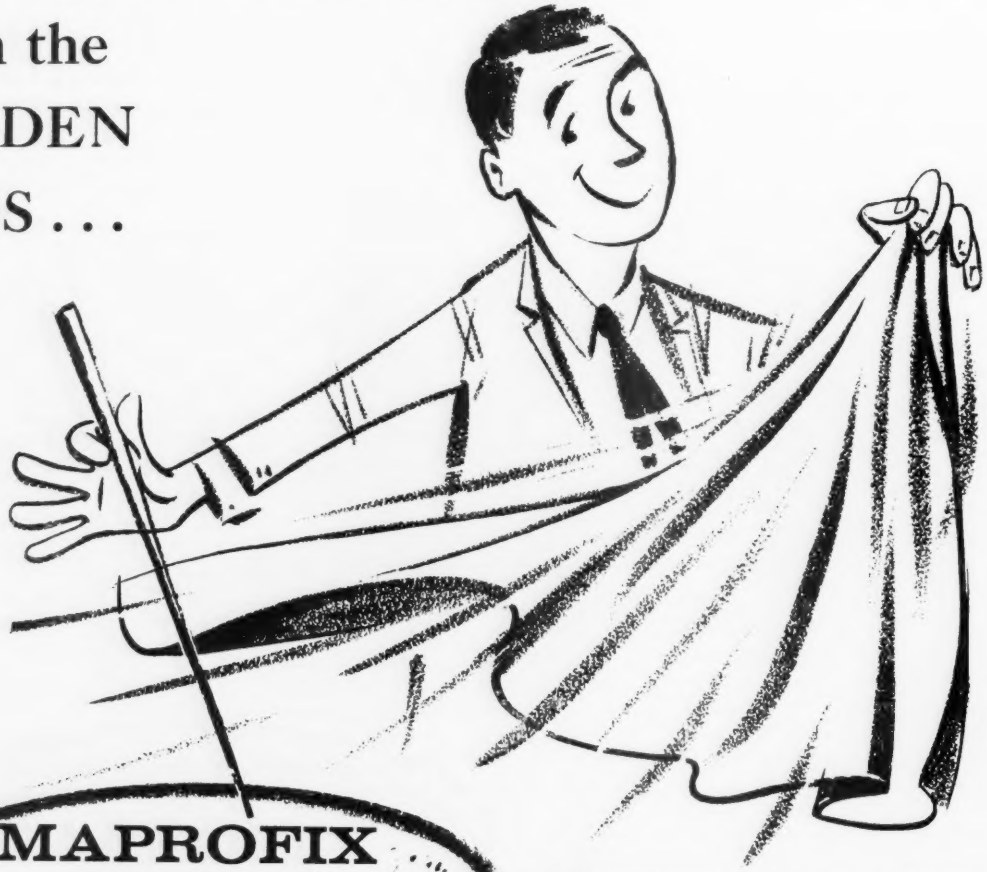
Robert B. Rohrer, associate research director of the Armstrong Cork Company, has retired. J. E. Hazeltine, Jr., has been named assistant director of research. Mr. Rohrer has been associated with the Armstrong research organization for more than 44 years.

Valentine H. Fischer, vice-president of Dodge & Olcott, Inc., has

VALENTINE H. FISCHER

retired after 44 years with the firm. Mr. Fischer is a former president of the Essential Oil Association.

The LAURYL SULFATES with the HIDDEN PLUS . . .



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Behind every successful product line is a hidden plus . . . properties which lift it beyond the usual. The ONYX **MAPROFIX**® series, the most extensive line of Lauryl Sulfates available, go far beyond the expected.

The **Maprofix** series are the most unique in the industry . . . carefully controlled free fatty alcohol content, sodium chloride content as low as 0.1% on a 30% active basis . . . exceptionally uniform light color . . . the quality standards of the field. No rust or contamination . . . manufactured in glass and shipped in polyethylene lined liquipak containers.

You're paying for the best . . . you should be getting **Maprofix.**

The **Maprofix** series is available in the following forms:

- 7 different types of aqueous sodium lauryl sulfate paste — **Maprofix** WA-MM Series
- The standard of the industry in dental grade sodium lauryl sulfate — **Maprofix** 563
- The preferred 90% active powdered technical grade — **Maprofix** LK
- 4 types of triethanolamine lauryl sulfate — **Maprofix** TLS Series
- 2 types of ammonium lauryl sulfate — **Maprofix** NH Series
- 2 types of diethanolamine lauryl sulfate — **Maprofix** 2109 Series
- 2 types of ethoxylated lauryl sulfate, sodium and ammonium salts — **Maprofix** ES Series

Which **Maprofix** is best for your product or process?

Expansions, New Plants and Acquistions . . .

New GE Sales Office

The Silicone Products Department of General Electric has opened a new sales office at 11 West Monument Street, Dayton, Ohio. James Hamlin, formerly with the Cleveland office, is the sales repreststative in charge. Telephone BAldwin 3-1263.

Stokes Expands Facilities

F. J. Stokes recently completed expansion of its facilities for designing and producing precision punches and dies. The new facilities now make it possible for Stokes' Punch and Die Division to operate as a completely self-contained unit.

A full complement of inspection equipment at F. J. Stokes's Punch and Die Division includes stereo microscopes, optical comparators, profilometers, dial bore gages, master air gages, and electronic sizing equipment incorporated into the machines, permitting accurate measurement to tolerances within millionths of an inch.

New Genetron Plant

Allied Chemical's General Division is producing Genetron fluorinated hydrocarbon refrigerants and aerosol propellants in a new plant at Elizabeth, N. J. With a capacity in excess of 10,000 tons a year, this is the company's third Genetron facility. The others are in Baton Rouge, La., and Danville, Ill.

Hattie Carnegie Acquired

Hattie Carnegie, Inc., and its affiliated companies have been acquired by an investment group headed by Edward Isaacs. Terms of the transaction were not disclosed.

The Carnegie corporation operates women's wear retail stores and affiliated manufacturing and wholesale companies for perfumes, colognes, cosmetics and other items. Officers of the corporation are: Toni Carnegie, president; Irving Apisdorf, executive vice-president; and Claire Carnegie, vice-president. All have been associated with the firm for a number of years.

Duveen Soap Corporation's newly acquired premises adjacent to main plant in Long Island City, N.Y. Modern European soap-base drying equipment has been installed in the new plant.

New Glass Container Plant

Brockway Glass Company's new multi-million dollar glass container plant in Rosemount, Minnesota, is located about 15 miles south of Minneapolis. It has a 176,400 square-foot production area and a warehouse with 141,750 square feet. Jointed grasshopper chutes on the top story of the building are used to deliver the various materials used in the manufacturing process to the proper bins. The company plans to install and equip a second furnace in the new plant next year.

J. B. Williams Acquires Landers, Frary & Clark

J. B. Williams Company, Inc., has acquired Landers, Frary & Clark. More than 96 per cent of the common stock has been deposited with the Connecticut Bank and Trust Company by stockholders accepting the Williams offer.

Harry Silverman resigned as president to devote full time to his duties as president of Plume & Attwood Manufacturing Company. Matthew B. Rosenhaus, president and chairman of the board of directors of the J. B. Williams Company, Inc, was elected to the same position for Landers, Frary & Clark. The following directors were also elected: S. L. Tedlow, Harry Parness, Jerome Cossman, Irving R. Rosenhaus, Edward Kletter and Henry Edward Schultz.

Landers' whole product line is being restyled. They will offer independent retail druggists exclusively a line of sundries under the trade name Universal Handy Hannah Deluxe. All other outlets will be offered products under the trade name Universal.

New Company Formed

Formation of a new, jointly owned company to make high-density (linear) polyethylene—used to manufacture blown plastic bottles and other products—has been announced by National Distillers and Chemical Corporation and Owens-Illinois Glass Company.

The new company, the National Petro Chemicals Corporation, will operate a plant at Houston, Texas, which will use the Phillips process under license from Phillips Petroleum Company, and will have an annual capacity of approximately 60 million pounds. C. E. Oman will be general manager.

Drawing of the new Continental Can building. Head office staff, all N.Y.C. offices, and certain division offices will consolidate in the 41-story building at 633 Third Avenue.

For some it is this: swell of sea, sweep of sky, sting of salt, boom of spray, and the sleek hull winging... a man's game in a fearnaught world. For others no less quick or bold, adventure comes in other challenges to mind and muscle. But to each of us, it carries its own cargo of sights and sounds and smells that move us and quicken our heartbeats in response and recognition. If you seek to pluck adventure from the air and put it in a flask or flacon, Givaudan can help you. No one knows more about the uses of fragrance, or its ever-changing fashions. And no one has helped so many searchers for a special, unique fragrance find their perfect answer. Givaudan-Delawanna, Inc., 321 West 44th St., New York 36

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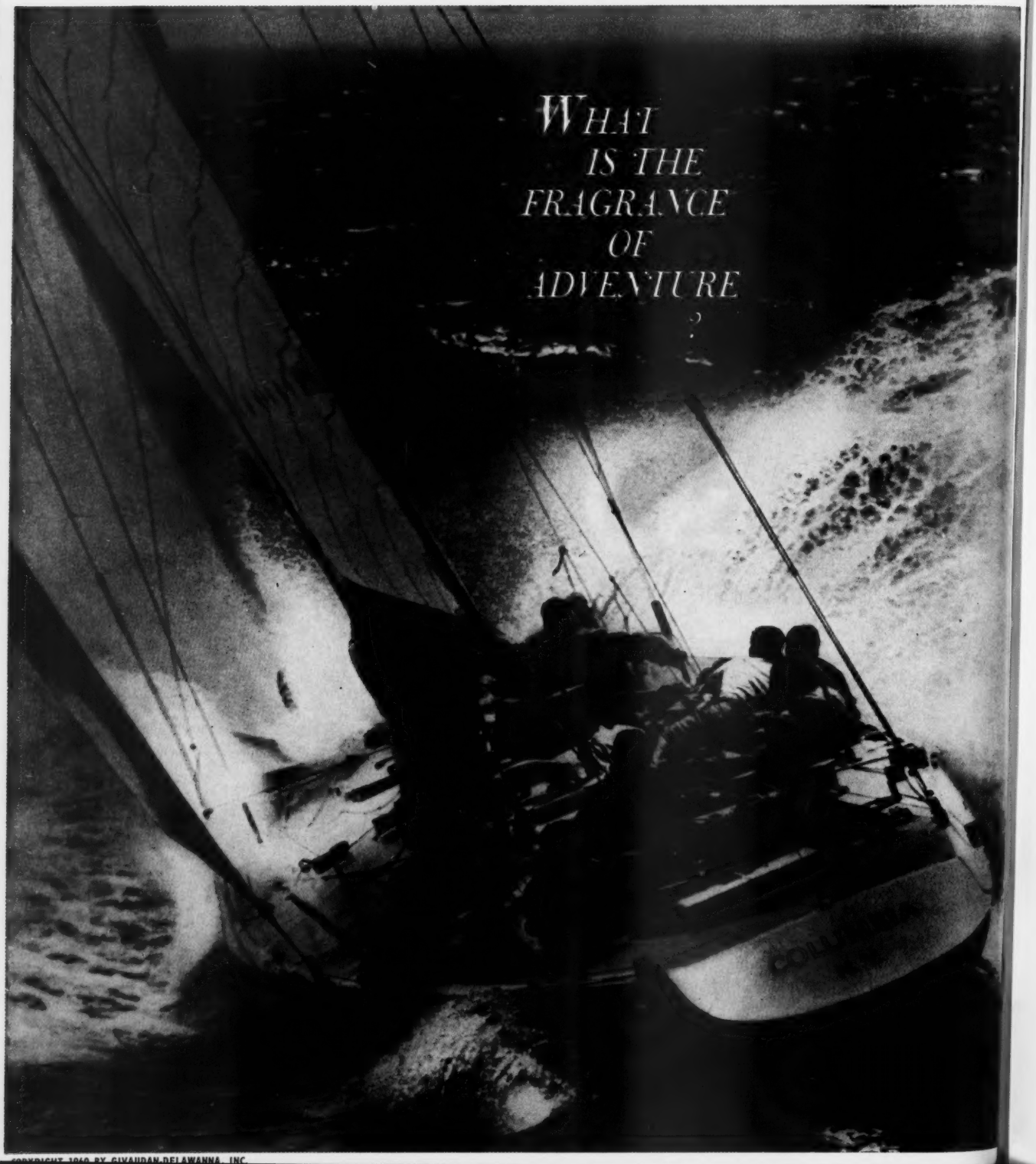

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Company News . . .

Gifford-Wood Appoints West Coast Sales Agents

Eppenbach Division of Gifford-Wood Company has appointed Bogart-Bullock Corporation and American Mill Equipment Company as general sales agents for the West Coast.

The Eppenbach Division manufactures homogenizing, emulsifying and dispersing equipment for the use of the petro-chemical, cosmetic, pharmaceutical, food and chemical process industries, as well as operating a custom engineering service.

Max Factor Wins Award

Max Factor and Company was presented with a Los Angeles Beautiful Community Award for the appearance of the firm's major manufacturing and warehouse building. The building is 215,00 square feet and is located on a 13-acre site in Hawthorne, Calif.

Clintwood Chemical Appoints Stanton Sales

Clintwood Chemical Company has appointed Stanton Sales Company as representatives in metropolitan New York, northern New Jersey and Philadelphia areas, for its line of Sandrol surface active agents.

Avon Celebrates Its 75th Year

Avon Products, Inc., is celebrating its 75th anniversary. At a commemorative luncheon in Good Housekeeping Institute's guest dining room, Raymond Peterson, publisher of *Good Housekeeping*, presented a scroll to John A. Ewald, president of Avon.

Atlas Powder Becomes Atlas Chemical Industries

In keeping with its increasing emphasis on the manufacture of chemicals, the Atlas Powder Company has changed its name to Atlas Chemicals Industries, Inc.

Three moves developed during the past two years also indicate the chemical nature of Atlas: the building of a polyols plant which will produce initially about 50 million pounds per year of polyhydric alcohols including glycerin, ethylene glycol and other glycols; a new $15,000,000 facility to manufacture anhydrous ammonia, urea, and related products, which is owned equally by Atlas and The Standard Oil Company; and a merger with The Stuart Company, manufacturer of ethical pharmaceuticals.

Association News . . .

Robert E. Horsey, vice-president of sales for Givaudan-Delawanna and president of the Essential Oil Association, presents the President's Cup to Byron N. Thompson, International Flavors & Fragrances, at the recent 10th annual EOA golf outing at White Beeches Golf Club, Hawarth, N. J.

Past founder and president, Stanley T. Olds of Hoffmann-La Roche, is shown with the new officers of the Midwest Industrial Chemical Salesman's Assoc. *L. to R:* Mr. Olds; president, E. F. Lasek, Tennessee Products and Chemical Corp.; vice-president, Paul Brna, George Lueders and Co.; secretary, R. E. Champlin, Meer Corp.; and treasurer, R. W. Meidell, Charles Pfizer and Co., Inc.

New C.I.S.A. Officers

At the combined July and August meetings held recently, the Cosmetic Industry Service Association elected new officers. They are: Jill Jessee, president; Elsie Thorsten, vice-president; Ruth Fox, secretary-treasurer; and A. Arnessen, corresponding secretary. Agnes Corte will be director for two years; Gertrude Savoie, director for one year. Committee chairmen for the following commitees were appointed by the president: service; ways and means; program; membership and advisory.

The C.I.S.A. recently held a fund-raising card party for the benefit of the various service projects of the organization.

Package Designers Elect Officers

Ernst Ehrman of Ehrman & Reiner, Inc., has been elected chairman of the Package Designers Council's Eastern Chapter for 1961-1962. A member of the Council since 1955, he has served as national treasurer, chairman of the Education Committee, and on the by-laws, program competition and Silvermine Symposium committees.

Also elected for two-year terms are Norman Schoelles as vice-chair-

Speaker's table at the recent annual Cibs ladies day luncheon at the Hotel Pierre, N. Y. C. Robert Ring, president, is fourth from the right, with guest speaker Harry Hershfield on his left.

man, and William N. Gunn as secretary-treasurer. Both are longstanding PDC members and have been active in Council work.

The Midwest Chapter of the Package Designers Council, with headquarters in Chicago, has reelected Rene Burvant, a partner of Hoagland-Burvant-Mell Associates, as chairman. William Goldsmith, vice-president of Dave Chapman, Inc., will again serve as vice-chairman, and Lawrence E. Museing, vice-president and partner of Design Dynamics, stays on as secretary-treasurer.

Appointments and Promotions. . .

MYERS BUD CATHER

Myers Bud Cather has been appointed executive vice-president of the Products Division of the Bristol-Myers Company. Mr. Cather joined the company in October, 1960, and has been assistant to the president since January of this year.

Charles W. Pike has been elected vice-president of operations for Merck Sharp & Dohme. Mr. Pike has been director of operations since joining the company in September, 1960.

Appointment of **Steele J. Elmi** as chief aerosol chemist, and of **Frank J. Brusky** and **Harold P. Hecken** as special representatives, aerosol sales, has been made by A. Schrader's Son, division of Scovill Manufacturing Company, Inc. Mr. Brusky will cover the eastern states and Mr. Hecken wil represent the firm in the Midwest. Mr. Elmi's background in the aerosol field includes being technical representative on aerosol propellants for the General Chemical Division of Allied Chemical Corp., technical director of Powr-Pak Division, B. T. Babbitt, Inc., and more recently, aerosol chemist at Nestle-LeMur Company.

Three executive promotions have been made by three foreign trade subsidiaries of Sterling Drug Inc.: Sydney Ross Company, Sterling Products International Inc., and Winthrop Products Inc. **Martin D. Howlett** is now treasurer and a director of the three subsidiaries. Divisional vice-presidents are **Gerald J. Burke,** advertising, and **Andrew**

CHARLES W. PIKE

P. Power, legal affairs. Mr. Howlett, formerly assistant treasurer, has spent his entire business career with Sterling's international organizations. Mr. Power has served in the foreign law sections of Sterling's legal department since coming to the company in 1952. **Wayne Howser** has been appointed acting manager of the Veterinary Department of Winthrop Laboratories, succeeding **Dr. C. E. Fanslau,** who retired in May as head of the department. Mr. Howser has been serving as director of sales.

Reginald C. McCrow has been named president of Mead Johnson International, as of December 1. In the meantime he will visit all the company's overseas operations. He has been serving as regional director, Latin America-North, headquartered in Mexico City.

Harry B. Wasserman has been elected vice-president of Lanolin Plus, Inc. Among Mr. Wasserman's duties will be that of senior brands manager. For the past 11 years, he had been associated with Bymart-Tintair, Inc., as vice-president and director of sales. **Howard Bailey** has been promoted from plant manager to vice-president in charge of manufacturing.

Robert J. Kurtz has been elected vice-president and plant manager of Unette Corp. Mr. Kurtz, who joined Unette in 1955, previously served as sales manager.

Victor T. Johnson, formerly assistant to the president of Bristol Laboratories, has been named executive -vice-president of Kremers-Urban Company.

STEELE J. ELMI

Warner Lambert Pharmaceutical Company has named **Paul R. van der Stricht** as executive vice-president. He was formerly senior vice-president in charge of International

PAUL R. VAN DER STRICHT

Operations. Mr. van der Stricht joined the company in 1953 as director of European operations. **William H. Derbins** has been appointed to the new position of vice-president for marketing of the DuBarry Division of Warner-Lambert. He was previously director of product management for Mead Johnson & Company.

WILLIAM H. DERBINS

The board of directors of Dolcin Corp. have announced the election of **John W. Angus, Jr.,** as president of the company, succeeding **W. T. Malone.** Mr. Angus, who joined the company in 1949, had been sales manager and executive vice-president. Mr. Malone remains as director and continues as chairman of the executive committee.

Mrs. Alexander Katz, president of F. Ritter & Company, has announced that **Allan E. Katz** has been appointed executive vice-president. Mr. Katz has had extensive experience in the flavor field in and all operations of F. Ritter & Co.

Robert C. Hyatt has become director of marketing, Antara Chemicals, a division of General Aniline & Film Corp. Mr. Hyatt succeeds **James M. Cloney,** who is now general manager of the firm's Ozalid Division. Mr. Hyatt was formerly director of marketing for the Collway Pigments Division. Antara Chemicals' newly created southwestern district office at 3939 Essex Lane, Houston 6, Texas, will be managed by **Raymond Weter,** formerly a sales engineer for the company. Additional staff in the Houston office are **Steven J. Stolton** and **Jeal Sugarman,** both sales engineers. **William C. Brunson** has been

ROBERT C. HYATT

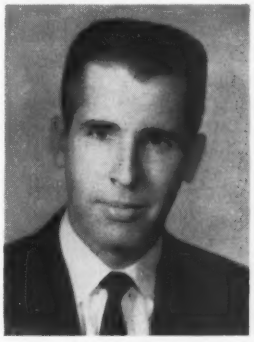
appointed Midwest regional sales manager, succeeding G. A. Brost, who has become product manager—intermediates. Mr. Brunson joined Antara in 1956 and has been sales engineer in the Atlanta, Georgia and Northern New Jersey areas.

Richard C. Willson, Jr., is now technical service manager for Isotron products and **Allen B. Reed, Jr.,** supervisor of the Isotron Aerosol Laboratory of Pennsalt Chemicals Corp. Mr. Willson's newly created position includes supervision of the Isotron Engineering Services and the Isotron Technical Service Laboratories. Both Mr. Willson and Mr. Reed have been associated with Pennsalt's Isotron Department since it was formed in 1956.

A number of personnel changes have been made in Riker Laboratories. **Dr. J. W. Stutzman,** vice-president in charge of research since 1952, is now vice-president and general manager. Succeeding him is **Dr. E. Hays,** formerly director of research. **Alfred H. Ridges,** vice-president in charge of sales since 1952, has retired. **Charles Adams,** formerly sales manager, is the new vice-president in charge of promotion. **Nathan Wolfstein, Jr.,** fills the newly created position of vice-president for administrative services.

RICHARD C. WILLSON, JR.

Ramon Perez, who has been in charge of the Export Division, has taken residence in Zug, Switzerland as expert director of Riker International. **Norval Mealey** has been promoted from assistant treasurer to treasurer. **Ed Byrd,** formerly sales manager of Southern California, is now western regional manager, and **Sig Klein,** formerly manager of

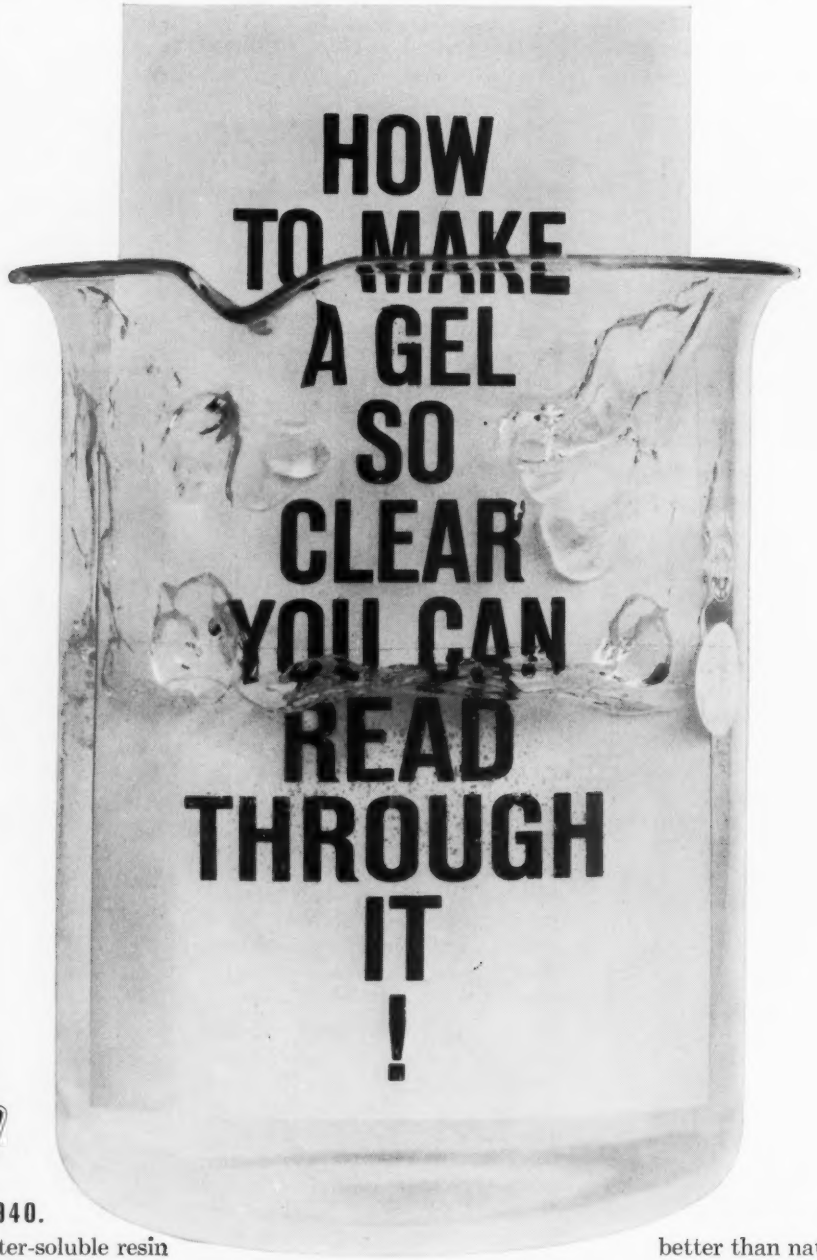


ALLEN B. REED

New Jersey, is now eastern regional manager.

Barnstead Still and Sterilizer Company has given **Verity C. Smith** charge of research and development. Mr. Smith has been with the company 12 years.

Thomas M. Asher, Ph.D., assistant director of research, has been appointed director of scientific services for Hyland Laboratories division of Baxter Laboratories, Inc. New manager of pharmaceutical development is Dr. G. Philip Lehrman. Before joining Baxter, Dr. Lehrman had been with Central Pharmacal Company.



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Water-Soluble Resins

Albert B. Scott, Ph.D., has joined the Medical Research Department of Hoffmann-La Roche Inc. as clinical research consultant. Prior to joining Roche, he was vice-president of the Central Pharmacal Company.

Three appointments have been announced by C. B. Fleet Company: **William P. Ferrell,** assistant sales manager, is now sales manager, filling the vacancy caused by the death of **O. B. Newton, Jr.; Edward T. Hapgood,** general manager of the Old Dominion Box Company, has joined C. B. Fleet as plant manager; **Harry H. Hill, Jr.** now advertising and promotion manager, had been southwestern division sales manager.

Dr. Salsbury's Laboratories has appointed two managers for its parasitology investigation sections. They are **Willis C. McGuire,** a research staff member for 12 years, and **Dr. Robert R. Baron,** formerly assistant microbiologist at the Caldwell Branch Experiment Station of the University of Idaho.

Pitman-Moore Company has promoted **Dr. Harold A. Nash** to assistant to the technical director. He previously was in charge of pharmaceutical research.

The appointment of **Dr. Werner R. Boeheme** as director of central research has been made by Shulton, Inc. Dr. Boeheme will assume overall responsibility for the organic and pharmaceutical laboratories. Prior to joining Shulton, Dr. Boeheme was manager of medicinal chemistry research at Ethicon Inc., a division of Johnson & Johnson.

WALTER WIEN

Walter Wien has been appointed sales promotion director of Fritzsche Brothers, Inc. In recent years Mr. Wien has held executive positions in the sales promotion and public relations fields.

Kenneth J. Dumas, M.D., formerly director of clinical research for Chas. Pfizer & Company, has joined Syntex Laboratories, Inc., as director of medical services.

George R. Purdy, previously associated with Onyx Chemical Corporation, has rejoined the company after leaving in 1956 to form the Karasell Chemical Company. Most recently he has been associated with the Refined Products Corporation. Mr. Purdy will be technical sales representative for New York, New Jersey and eastern Pennsylvania.

D. B. Decker, Jr., has been promoted to regional director for McNeil Laboratories, Inc. Mr. Decker joined the sales staff of McNeil in 1950.

S. B. Penick & Company has named **Richard M. Collins** sales representative for the metropolitan New York, Bronx and Westchester County area. Mr. Collins was formerly a sales correspondent with Penick, having joined the company in 1950.

RICHARD M. COLLINS

The following research appointments have been made by Chas. Pfizer and Company, Inc. **Dr. R. E. Kent** is now assistant director of the chemotherapeutic research department. **A. C. Finlay** is now manager, building and technical information services department. **Dr. B. M. Bloom, Dr. W. M. McLamore, Dr. K. F. Finger, Dr. L. H. Conover, Dr. W. D. Celmer, Dr. J. E. Fahey, Dr. E. R. Pinson, Dr. C. R. Stephens** and **I. J. Friedman** have been promoted to newly created positions of section manager. Advanced to the position of group supervisor are **Dr. H. T. Huang, Dr. C. E. Larrabee, Dr. W. T. Moreland, Dr. B. E. Tate, E. G. Martin** and **T. A. Morris. Harold B. Conant** has been named manager of chemical commercial development for the international subsidiaries of Pfizer, a new department. Mr. Conant joined Pfizer in 1952 as a member of the technical service department.

Dr. Saul Lande has joined the staff of the section of organic chemistry of the Squibb Institute for Medical Research.

Coty's new field manager-wholesaler is **John A. Hutchens,** formerly sales manager, drug wholesalers, for Shulton, Inc.

JOHN P. LIPPMAN

John P. Lippman, formerly manager of the wholesale division, Henri Bendel Perfumes, has been appointed administrative assistant for sales for Chanel, Inc.

Daniel C. Reheis is now production manager and purchasing agent of Reheis Company Inc. Mr. Reheis, who is the son of Daniel H. Reheis, president, was formerly personnel manager. He continues as the company's assistant secretary.

R. P. Perry, manager of the Bemis Bro. Bag Company's Minneapolis plant and sales division, has been named to the company's newly created position of director of product development. He will be succeeded in the Minneapolis managership by **Dexter A. Clarke,** manager of the Bemis plant and sales division in Indianapolis.

Byron E. Fossieck is now manager of the central region of Ciba Pharmaceutical Products Inc., replacing **Reginald J. Horlock,** who retired after more than 30 years of service with Ciba. Mr. Fossieck joined the company as a representative in St. Louis in 1943. **John E. Haas** succeeds **Gerald Leonard,** who

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Over the years, Sonneborn research has literally "opened doors" to a multitude of pharmaceutical and cosmetic products. The key: highly refined petroleum products that enable the manufacturer to select exactly the right base to enhance his product's properties and make it pleasanter to use. ¶ Sonneborn's success has been a result of two factors: experience, and knowhow in refining of oils... coupled with the ability to modify and blend them for selected properties. Through research, Sonneborn has developed a wide range of white mineral oils, petrolatums and petroleum specialties to suit a great diversity of requirements. ¶ We'll be glad to work with your chemists and production people to devise a refined petroleum product that will open many doors for your product too . . .

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recently retired as trade relations manager. Mr. Haas joined Ciba as a market research analyst in 1956.

HERBERT LINNE

Paris Cosmetics, Inc., has named **Herbert Linne** as general sales manager. Formerly with Van Dyk & Company, Mr. Linne has had over 15 years of experience in technical sales of cosmetic raw materials and perfumes.

Northam Warren, Division of Chesebrough-Pond's Inc., has named **Ruth Bobbitt** as international color and fashion co-ordinator and secretary of the Northam Warren International Color Board. Miss Bobbitt started with the company in 1940 as a traveling representative, and has been publicity director since 1955.

Roy Slipiec has joined Mona Industries, Inc., as midwest district manager. He was previously vice-president in charge of sales for Ralph Kaye & Associates.

Seymour A. Lubman has been named vice-president in charge of marketing and sales of Purdue Frederick Company. Mr. Lubman has been vice-president in charge of sales since 1958. Formerly with Harrower Laboratories, Division of Warner-Chilcot, he joined the company in 1954.

Dorsey Laboratories, Division of The Wander Company, has appointed **Dr. Levi E. Bingenheimer, Jr.,** as research associate in the pharmaceutical research and development department. Dr. Bingenheimer has taught at the St. Louis College of Pharmacy and the University of Tennessee, where he most recently has been serving as acting head of the Departemnt of Pharmaceutical and Medical Chemistry.

Tedd Thomas has been promoted to sales promotion manager for Prince Matchabelli Inc. Mr. Thomas became associated with the firm in their campus-selling program while a student at Princeton University.

Ortho Pharmaceutical Corporation has appointed **William A. Youngster** as western regional manager. Mr. Youngster, who has been manager of the South Pacific Division of Ortho, with headquarters in Los Angeles, replaces John P. Shepard, who has been promoted to sales manager. The western regional offices, previously located in Kansas City, Missouri, are being moved to Los Angeles.

The west coast representative for the special markets department of Nopco Chemical Company is now **Van Schermerhorn.** He will cover Oregon, Washington, parts of Idaho and Montana, and British Columbia.

David J. Warner has been appointed sales manager of Fleuroma, Inc. Mr. Warner, with the company for the past seven years, is a past president of CIBS and a member of BIMS.

Raymond Barnett, formerly with Revlon, has joined Emson Research as a sales representative. Mr. Barnett will specialize in cosmetic and toiletry markets.

As part of an expanding packaging sales program, Gardner Division of Diamond National Corporation has appointed six packaging sales representatives. They are: **Charles C. Murden,** Minneapolis office; **J. N. Schlueter,** Greensboro, N. C.; **John H. Gwin,** Atlanta; and **David E. Hood, Harold Lovely,** and **Robert W. Hawkey,** Chicago. Mr. Murden, previously senior sales correspondent, paraffined cartons, joined Gardner in 1955. Mr. Schlueter was previously coordinator of product planning and development. Mr. Lovely was formerly a machine development technician. Mr. Gwin was sales representative with Mele Manufacturing Company, Mr. Hood, sales representative with Rheem Manufacturing Company, and Mr. Hawkey, formerly division sales manager of Simoniz Company.

Pharmich Laboratories, division of Cichigan Chemical Corporation have appointed **Fred F. Forry** as operations manager with headquarters at the Cedar Rapids plant. Formerly assistant director of Quality Control Laboratories, he joined Pharmich Laboratories in 1957.

AUDREY GARDNER

Mrs. Audrey Gardner has joined Alpine Aromatics, Inc., as West Coast sales representative. Mrs. Gardner will cover the Los Angeles area. She had been president of a company manufacturing bath oils, perfumes and toilet water.

Obituaries

R. K. Turner

R. K. Turner, a vice-president of Union Carbide Corporation, died recently at the age of 59. He had been with the corporation since 1924.

B. Reynolds

Blythe M. Reynolds, a chemical engineer who retired last year as vice-president for operations of Merck & Company, Inc., died recently. His age was 66.

After retiring, Mr. Reynolds became a consultant to chemical companies, including the American Metaseal Company and Truebeck Laboratories. He joined Merck in 1944 as director of engineering, after having been a vice-president of the Heyden Chemical Corporation.

J. A. Ellegood

Dr. John A. Ellegood, assistant to the director of operations of Merck Sharp & Dohme, died June 29, in Pennsylvania Hospital, Philadelphia.

Dr. Ellegood had been instrumental in the advancement of quality control procedures and had been director of quality control at Merck for 15 years.

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(*Continued from page 197*)

versions of the hoped-for final package.

While you are studying the reaction of your consumers to the packages under consideration, your designer will be developing the information you will need to make a final decision. Specific and detailed unit costs and tool investments will be obtained. The possible need for, and cost of, new or modified equipment in your plant will be carefully detailed. The problems of the manufacturers of the components and your own production elements will be thoroughly evaluated and, where necessary, coordinated. Laboratory tests will be analyzed. And an outline of the actual time required to complete each idea under consideration will be prepared.

Then, presumably, a final decision will be made by the marketer, or top management, or *somebody*. I am deliberately avoiding the situation that so often results from the statement made at this meeting, usually by a vice-president, that starts: "These ideas are really wonderful, but why don't we. . . ?" It's easy, you just go back to Section I, Part B in your original outline of action, and start all over again.

Seriously, when management has given its final go-ahead, we generally encounter our *worst* problem. Impatience. This is a normal reaction. You have sweated this thing out with us for weeks, maybe even months. You've made your decision. Now you want to get going. It is only human to be impatient now. But we have to continue to work with inhuman schedules and considerations. I have done some checking. The plastics industry is now quoting an average of 16 weeks to make molds. Glass makers require eight weeks. Printing plate engravers feel they are entitled to at least four weeks. And so it goes. These are things that cannot be changed or even altered very much. Any attempt to force us into the impossible now will just give both of us ulcers, and possibly result in a final product below the expectations of all of us.

For now the packaging expert starts to earn his keep in a different way. Now comes the detailed work that none of us enjoy. In a good organization the purchasing department takes over and will do most of the rest of the work. But the exact specifications, preparation and approval of final art and the step-by-step checking of all the components as they are developed is the responsibility of the packaging director. I have no case for the packager whose final result is not up to his or his management's expectation because someone goofed. Until the package is in the markets and selling at a rate greater than you expected, his job is not finished.

In closing I would like to leave a word with those of you who are marketing a significant number of consumer products but who do not as yet have a director of packaging on your staff. With all due respect to my friends whose excellent services are

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Antiperspirants and deodorants
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*including phenolic antiseptics like hexachlorophene, bithionol, etc. which maintain high activity with TEGACID SPECIAL.
TEGACID SPECIAL, like the other members of the ester-balanced line exhibits unexcelled texture over a wide range of viscosity.
Write for data and samples.
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TEGIN P —self-emulsifying propylene glycol monostearate.
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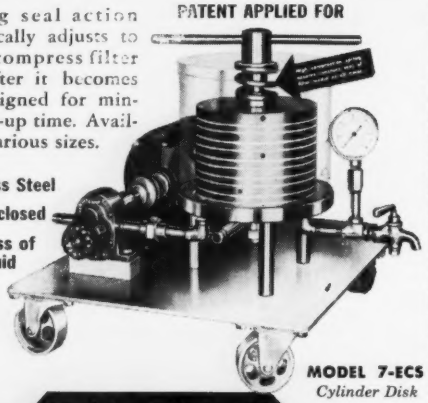
▲ Totally Enclosed
▲ No Loss of Liquid



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available on a contract or retainer basis, I urge you to consider the benefits of having a man or a section in your own organization devoted to the success of your packaging, and thus to the success of your marketing operation. Along with most other "captive" packaging experts, I believe wholeheartedly in the role and function of the industrial or packaging consultant. I am, in fact, urging my company to retain such an organization. But I believe any company that will acknowledge the dominant role played by packaging in today's market will admit that the administration of the packaging operation is a full-time job. And I believe my colleagues in the consulting field will agree with me.

PRODUCT DEVELOPMENT

(Continued from page 160)

thalidone, produces a saluretic and hypotensive effect. With many patients, a dosage of 100 mg. three times weekly is sufficient. In contrast to the benzothiadiazide products, there is little loss of potassium, and the danger of electrolyte imbalance is reduced. Aldactone (spironolactone), an aldosterone antagonist, offers for the first time an opportunity of managing edema on a more physiologic basis. Spironolactone blocks the effect on the kidneys of mineralocorticoids and the sodium-retaining effects of aldosterone. The primary uses of this drug are in congestive heart failure, nephrosis and hepatic cirrhosis, where its action is especially effective when used in conjunction with other diuretic agents. A combination of spironolactone with hydrochlorothiazide has recently been put on the market. Unfortunately, the manufacture of spironolactone is costly.

In recent years both the medical profession and the public have become extremely cholesterol-conscious, and a great deal has been written about the possible relationship of this agent to the development of arteriosclerotic lesions. Still, our knowledge of the true import of cholesterol in the human organism remains inadequate. Since clinical observation suggests that hypercholesterolemia frequently accompanies atherosclerosis, reduction of high cholesterol levels seems desirable.

Lowering of cholesterol blood levels can be achieved by either diet or drugs, or both. Significant progress with the use of drugs was made when triparanol (MER/29) became available. With this drug it is possible for the first time to inhibit the biosynthesis of cholesterol. The final step in the synthesis of cholesterol is prevented, and its precursor, desmosterol, accumulates in the serum. The biological significance of this action requires further clarification. Recent studies also suggest that triparanol partially blocks the formation of adrenocortical steroid hormones in man, and this observation, too, deserves further exploration. Considerable studies have also been carried out with analogs of thyroxine as cholesterol reducing

agents. Dextro-thyroxine developed by Baxter Laboratories may be marketed this year. Other agents will doubtless follow.

Even if more effective and safer drugs become available, the basic question of the relationship of cholesterol to the etiology of atherosclerosis remains to be solved, and this will take a long time. New facts are continually becoming known and new clues are advanced. For example, a recent report from the meeting of the Association of American Physicians in Atlantic City by scientists from the Rockefeller Institute suggests that a diet rich in carbohydrates and low in fats tends to raise the level of fats in the blood! We should not look for miracle cures in this area; here we must be satisfied with slowly elaborated progress.

Mental and Neurologic Disorders

The Age of Anxiety has produced many drugs that relieve anxiety and mental confusion. The underlying causes, whether psychologic or physiologic, remain to be discovered. The solution will take many years, and a great deal of research. Perhaps we shall never reach it; or we may discover that many of the so-called "neuroses" are actually due to organic diseases which we are thus far unable to diagnose. However, anxiety, depression and schizophrenia are three major conditions we must cope with here and now.

In the tranquilizer field, several new and interesting developments have taken place. Additional phenothiazines have been marketed with specific action and use. Mellaril of Sandoz, (thioridazine), exerts a minimal anti-emetic effect and produces little if any of the extrapyramidal stimulation which results in Parkinson's syndrome. Tentone (methoxypromazine) of Lederle Laboratories is claimed to be useful to the physician in the management of those anxiety and tension states that present themselves in office practice. Fluphenazine dihydrochloride was marketed by White Laboratories as Permitil and by E. R. Squibb as Prolixin. It is a highly potent agent effective in small dosage. Timovan (prothipendyl) of Ayerst Laboratories is a modified chlorpromazine recommended especially for the management of the anxious geriatric and adolescent patient.

Drugs of a different and new chemical composition are Dornwal (amphenidone-Maltbie), and Striatran (emylcamate), marketed by Merck Sharp & Dohme. The most successful of the nonphenothiazine group of products has been Librium (chlordiazepoxide) of Roche Laboratories. Pharmacologically this drug exhibits the tranquilizing properties of the phenothiazines and reserpine, but has none of the autonomic system-blocking effects of the latter. Although there is a need for more controlled studies, clinical investigations suggest that chlordiazepoxide is a useful antianxiety agent effective in relieving tension states. It has also proved effective in quieting alcoholic excite-

(Continued on page 226)

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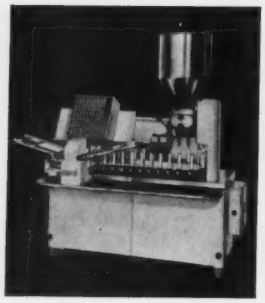

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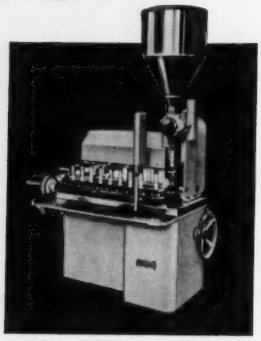
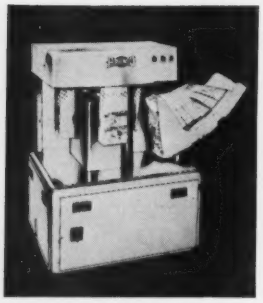
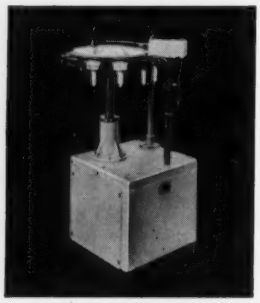


PACKAGE PASTES, LIQUIDS, SEMI-LIQUIDS WITH 3000-per-hour speed: get a GAB. Fully automatic. "No tube, no fill." Handles up to 1¾" x 8" on special order. Tube-cleaning, cap-tightening and blow-off standard equipment.



FEEDS, OPENS UP-TO-2100 BAGS AN HOUR AUTOMATICALLY. VUF can serve three combination weighers and portioning machines at one time. Synchronized speed controls end no-fills, double portioning. Sizes: 2½"—6¼" wide to 8⅝"—15⅛" high.



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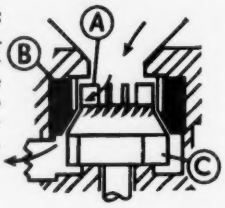
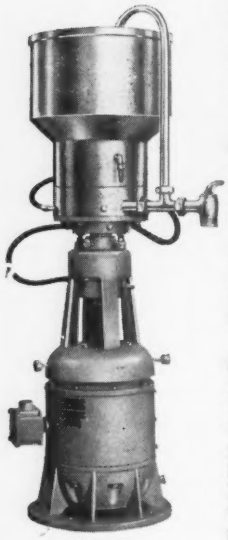
Eppenbach Colloid Mills

OPERATING PRINCIPLE: Rotor blades (A) break-up slurry. Serrations in rotor and stator provide mechanical shear and force material into adjustable gap (.0005" to .125") between rotor and stator (B) for intense hydraulic shear. Lower part of rotor (C) adds further whirling action.





VT-11

APPLICATIONS: Cosmetics, pharmaceuticals, foods, gum dispersions, insecticides, paints, paper coatings, polishes, plant extracts, resin dispersions, inks, textile and leather finishes, soaps, asphalt or silicone emulsions, etc.

FEATURES: Stainless steel contact surfaces. Ball bearings, whipless shaft. Pumping action. Parts for 3-piece rotor and 2-piece stator available separately for low maintenance. By-pass or recirculating assembly. Jacketed hopper and homogenizing zone. Calibrated micrometer gap adjustment.

SPECIAL MILLS: *Micro-Mill* for lab study of products under "Applications" also wet grinding fibrous tissue, bacilli, spores, mold, yeast, pollen, etc., in 150 ml to 2 liter quantities. Includes recirculating pipe, jacket, removable internal cooling coil. Also serum mills. Pressure head and horizontal or portable mounting available.

LAB, PILOT AND PRODUCTION MILLS. Typical sizes:

Model	hp	rpm*	rotor diam.	gal/hr**
QV-6	¼	8000	2"	to 10
VT-7-2	1½	7200	2.5"	to 60
VT-8	3	3500	4"	to 75
VT-10	10	3500	6.25"	to 200
VT-13	50	3500	8.5"	to 1000

*Also higher-speed belt-driven models.

**For comparison only. Actual output ranges from 50% to 200% of figures shown.

MICRO MILL

Micro-refining with an Eppenbach often improves both product and process. Refining agglomerates in a mix, for example, may improve stability and appearance (shine), speed chemical reaction through greater surface area and reduce amount of emulsifying agent.

The easy-to-set, micromatic gap control allows accurate, systematic reproduction of emulsions or suspensions.

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Management Forum

BY FRANCIS CHILSON, Sc.D.
PROFESSIONAL ENGINEER

Our English Cousins

As soon as I finish whacking out this contribution to illiterature, I shall be off for England. It is a relief to go to England and to France. Over there one hears little or nothing about the imminence of war with Russia; one hears no frantic appeals from government officials to build bomb shelters forthwith or risk annihilation; one hears no frantic demands to build a bigger army, a bigger air force, a bigger navy; a bigger rocket force, a bigger budget for military purposes. The English attitude seems to be: "If war comes we'll be here to meet it, and if we're not here, we'll be somewhere else. There'll always be an England." There is a fear among the British military men I've talked to that the U.S.A. is so nervous and trigger happy that we might pull the pin that will start the holocaust. The French worry less about the Russian threat than the British do. The French cannot imagine a world without a strong leaven of French influence. The French say "France was here before any of them—Russia or England. We were a civilized country while these people were still barbarians. So France will continue!" Anyway, I shall be glad to be away even if only for a brief time from the rumors and worries of war.

One thing about the English worries me deeply because it reveals how incompetent our information and public relations services are. I refer to the fact that the British public, the British business community, and the British military were never informed, either through their own newspapers or through our own information services, as to the extent of our contribution in both world wars and after them, and in the war against Japan. Although I have been going to England for many years, I never suspected the existence of a feeling of bitterness against us until I was told by no less a person than my friend, Major General Lord, commander of the British engineering forces in World War II, that we had enriched ourselves at the expense of the British during two world wars. When I realized he was serious I asked him if that opinion was prevalent throughout the upper eschelon of the British army. He said it was. I questioned him at considerable length. He did not know we lost more people in World War II than all the Allies put together (apart from Russia of course, if you can call the reds allies at any time). He did not know that our contribution to Lend Lease was 38 billion dollars. He did not know the extent of the Pacific war, nor the losses we suffered in it, nor its cost to us. In short he knew very little about our contribution to either of the great wars. He knew little except as it affected his own area of responsibility.

The next day one of my business associates confirmed the fact that the idea is prevalent among British business men that we got rich, pinching their markets while they were fighting. Later on, one of my technical colleagues told me he'd recently seen a documentary film about our war in the Pacific and it amazed him because he had no idea it was so extensive or so terrible. He knew about Pearl Harbor, of course. That was splashed across all the British papers because it brought us into the war.

Further confirmation of this bitter antagonism came from the *London Daily Mail* in a headline at the time the Duke of Edinburgh was visiting Toronto. The headline: "EDINBURGH SOCKS U. S." I read the report of the Duke's speech. The first part dealt with the great contributions England has made to the world in the sciences and the arts. He emphasized the fact that England wasn't finished yet. Then he referred to the U. S., and described our economic help to England *after* the war. He characterized that help as "an act of generosity unparallelled in history." That's how Edinburgh "socked" us. There wasn't in the speech a single word that could have been twisted into a criticism of the U. S.

One can understand the bitterness of the British in having to accept the fact that England is now a sec-

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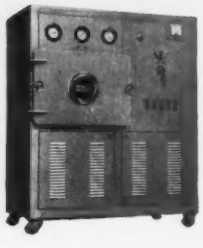

Most advanced pilot and light production freeze dryer available . . . Amsco Del-Vac Model 22424RHVM, with heated and refrigerated process shelves, hydraulic stoppering shelves, 5 to 10 micron vacuum pump . . . The ultimate in freeze dry efficiency.

ond-rate power in an historical and political sense. But one cannot understand how our government has failed to communicate, over the barrier erected by the British press, the full extent of our aid to the British people or the magnitude of our efforts in both wars.

Automation and Unemployment

According to government projections, this country *only ten* years from now will have a population in excess of 200 million people; a labor force of 87 million; and, after 1970, that labor force will be augmented annually by a minimum of three million eight hundred thousand persons who will have reached the age of 18. A substantial proportion of these teenagers will go to college, but their numbers will be equalled by annual graduates and drop-outs, who will want jobs. In an age of ever accelerating automation, where will these jobs come from?

A hundred years ago we had a half a continent to conquer and unlimited natural resources to develop. People who lost their jobs through mechanization or local maladjustment of the economy, packed up and went west. Now we've no place to go; no worlds are left to conquer. Alaska remains undeveloped and will offer, for a few years, great opportunities for a few million hardy souls. Others will have to emigrate to Australia and Canada, both of which countries still offer immense living space and golden opportunities.

Up until ten years ago the process of mechanization entailed no serious problems. People who were displaced could get jobs building and servicing the machines that displaced them. Moreover, domestic population growth and foreign markets of increasing size absorbed the increased output of mechanized factories, and this absorption was so great that we were confronted with the phenomenon that, as industries grew larger and became more mechanized, they employed more people! But the *kind* of mechanization or automation that had been developing for the past century was different from what it is today. Through the use of electronics we have reached a stage in automation which provides us with machines that will not only *run* other machines but will *make* other machines! In other words, mechanization or automation is now proceeding at a geometric rather than an arithmetic rate.

I realize that at the moment these great, costly, electronically controlled, automatic machines require production of enormous volumes of identical parts or products. We have that volume in many industries and are getting it in ours. But also we are being provided with an increasing number of small, relatively inexpensive electronic gadgets that can be economically used in small volume production. We have controls and instruments that enable one operator to control several machines which formerly required individual operators. The Pneumatic Scale close-coupled line comprising bottle cleaner, filler, capper, and labeler is a good example of this.

It is clear that the progress of automation is now so swift that displaced labor cannot be quickly absorbed. Since, as Henry Ford proved long ago, our employees are our market, a means must be devised to keep our people at full employment so that they can continue to purchase the products they produce.

How can this be done? One way is through the use of guaranteed annual wages. In the drug and cosmetic industry we can well afford to do this. If the Pharmaceutical Manufacturers Association and the Proprietary Association were to announce that our industry would guarantee annual wages at current rates of pay, the publicity engendered by this gesture would go a long way toward neutralizing the effects of the Kefauver hearings.

The second thing that can be done is to shorten the work week to 30 hours while maintaining the 40-hour pay scale.

The third thing that should be done is to initiate an intensive national study of distribution and marketing costs for the purpose of applying automation where possible, with a view to decreasing prices. The price of everything is too damned high and the principal reason for this condition is that marketing costs are too damned high.

There was a time when cost reduction resulting from mechanization enabled manufacturers to pass the benefits along to consumers through reduced prices. This in turn increased the size of the market. The historic example of this process is the Model T. Ford. Now, although we have infinitely greater mechanization possibilities than were available to Henry Ford, prices have increased steeply and still are increasing. It doesn't make sense.

Obsolete Technicians

We are accustomed to dealing with mechanical obsolescence; now we are confronted with obsolescence of technical personnel. Engineers, chemists and doctors who received their degrees ten or 15 years ago may be regarded as obsolete unless they have spent a substantial amount of their free time keeping abreast of the rapid advances and changes in their particular sciences. Unfortunately, very few graduates in any science make any effort to keep abreast of the onrushing tide, unless they happen to be teachers or have received their doctorates. A whole new world of physics, mathematics and chemistry has been discovered in the past dozen years. Mathematics has advanced so far that higher math today is incomprehensible to the engineer who learned his math a dozen years ago. In a recent issue of the Carnegie Alumnus, Dr. Thomas Stelson, writing on this problem, said:

"The decline in value or obsolescence of engineering personnel may likely become an increasingly serious problem in modern technology unless professional societies, employers and schools recognize its importance and develop suitable remedies."

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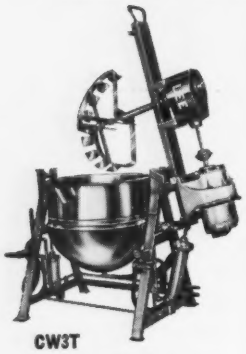

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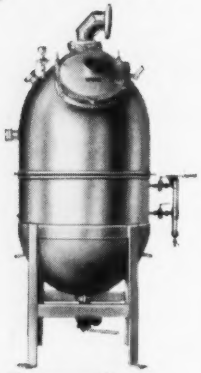

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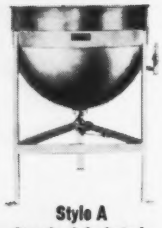

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Standard Jacketed
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Five-Way Classifier

Illumitronic Systems Corporation, Sunnyvale, Calif., has developed a way to speed and refine the weighing of pre-packaged merchandise. It weighs in motion at production line speeds, sorting underweights, overweights and onweights into five separate channels to simplify make-up or take-away in package contents.

In addition to under and overfill control, the equipment has applications such as portion and quality control by weight, and counting and grading by weight. Package weight range is 10 pounds, at speeds up to 300 units per minute. Accuracy is ± 1/32 ounce and range is adjustable from 1/10 to 2 ounces. Machines measure 30 inches in width and 59 inches in length.

Power-Curve Conveyor

Power-Curve Conveyor Company, 2185 South Jason Street, Denver 23, Colorado, manufactures a conveyor that carries all kinds of packages to the stacking point for shipment, where one man does the stacking.

NiMixer

National Industries, 1125 Lewis Street, Jackson, Michigan, has a new mixer for mixing materials in 55-gallon drums weighing up to 1,000 pounds. Material is mixed in its original container; there is no chance for entrance of foreign materials or for evaporation, and there is nothing to clean. The drum rotates at 30 rpm with no vibration.

Mixer Line

Mixing Equipment Company, Inc., 170 Mt. Read Blvd., Box 1370, Rochester, N. Y., has introduced a new Lightnin Nse Mixer line that incorporates innovations in side-entering mixer technology applied to fluid agitation. The new range of models achieves 50 per cent greater flow or blending capacity and a reduction of installation and operating costs.

Freon Water Chillers

Patterson-Kelley Company, Inc., East Stroudsburg, Pa., has available R-22 water chillers for maintenance of constant temperature and controlled humidity levels in research laboratory buildings.

Marking Machine

Markem Machine Company, 173 Congress Street, Keene, New Hampshire, has developed a machine for imprinting metal and plastic aerosol container caps. It will print completely around the circumference of caps from 1¾ to 4½ inches in diameter.

Drum Tumblers

Process Equipment Division, U. S. Stoneware Company, Akron 9, Ohio, has developed drum tumblers with built-in hydraulic lifts for raising 55-gallon steel drums to proper height for clamping into posi-

tion on the tumbler. The units possess a loading platform that can be raised and lowered under control from a three-way hydraulic valve.

Manual labor and physical injury hazard are reduced and the loading speed increased.

Gyro-Ribbon Mixer

Machinery and Equipment Division of Superweld Corporation, 6840 Vineland Avenue, North Hollywood, Calif., has developed a hemispherically designed mixer with the ability to maintain close tolerances between the rotor ribbons and the chamber walls for thorough and fast mixing operations. Sizes range from ½ to 19 cu. ft. Construction is of carbon or stainless steel, with or without vacuum chamber and/or steam jackets.

Rubber Tubing

W. S. Shamban & Company, 11617 W. Jefferson Boulevard, Culver City, Calif., has a new, low-cost, neoprene rubber tubing lined with Teflon. Specifically designed and approved for handling liquids including pharmaceutical fluids, Safe-T-Line's Teflon-liner will not impart any tastes or odors to the fluids it transports. It resists temperatures to 300° F. Tube sizes range from ¼ to ½ inches i.d., with working pressures up to 125 psi.

Screw Capping Machine

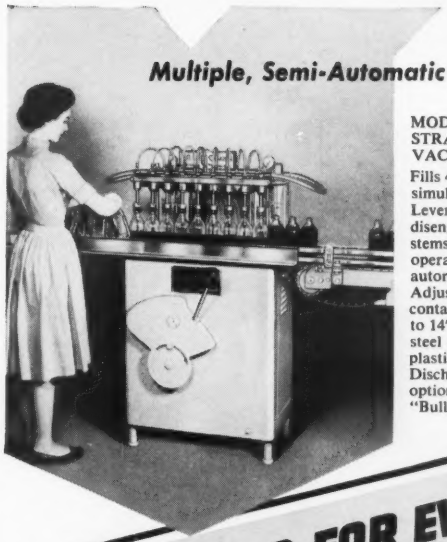
Chase Equipment Company, 633 Bergen Street, Brooklyn 38, N. Y., has a new 31SC automatic filling, plugging and screw-capping machine designed for sterile handling of ampuls, vials and plastic bottles with an hourly production rate up to 3500 units. Floor space required is 24 by 45 inches.

Plunger and Crimping Tool

Aerosol Products, Division of Royal Products, 86 Ames Court, Plainview, L. I., N. Y., has developed a new combination plunger and crimping tool for aerosol cans. Model No. APCR1 is designed for standard 1-inch can valves and permits greater area of contact for firmer, more secure sealing. When the plunger drops, it expands six resilient, precision-tooled segments for the crimping contact. When the plunger withdraws, the segments snap back into position for instant positive release of the can, ready for the next crimp.

Honeywell-Beckman pH System

Minneapolis-Honeywell Regulator Company, Wayne and Windrim Avenues, Philadelphia 44, Pa., has developed an integral system for *p*H measurement which can be mounted in any Electronik 15 instruments. The electrode leads are run directly to the recorder. The Model 75 amplifier uses the same standard Beckman glass and reference electrode and the same Thermo-Compensator used with the externally mounted Model W *p*H amplifier. For information, request S914-1.



Multiple, Semi-Automatic Filler

MODEL B-49 STRAIGHTLINE VACUUM FILLER
Fills 4 to 9 containers simultaneously. Lever engages and disengages filling stems, otherwise operation is automatic. Adjustable for container heights up to 14". Stainless steel construction; plastic available. Discharge conveyor optional. Write for "Bulletin B-49."

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YOU CAN spark your entire packaging operation with the right filler. Anything short of that can snarl your packaging pace. With a half century of experience in liquid filling, our engineers can specify filling procedure that will head your packaging operation most economically. Our recommendations will not obligate you. Please send sample of product, a dozen containers of each size to be filled and advise desired filling rate per minute, hour or day. Address our home office.

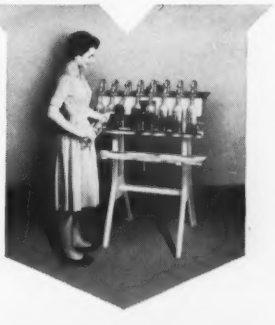
Steady Filling

MODEL B-2 VACUUM FILLER. Fills 2 containers while 2 filled containers are being removed and 2 empties loaded. Thus, filling is continuous. Handles containers up to 4½" dia., up to 13" high. Stainless steel construction. Plastic available. Portable. Filling is fast, efficient. Write for "Bulletin B-2."

For All Liquids All Containers

Also for foamy products that do not permit agitation. Stainless steel filling tubes. Fill controlled automatically. Glass lined tank. No power required. Product supply regulated. Write for "Siphon Bulletin."

Hand Filler. A precision unit of high quality for efficient filling. Write for "Hand Filler Bulletin."



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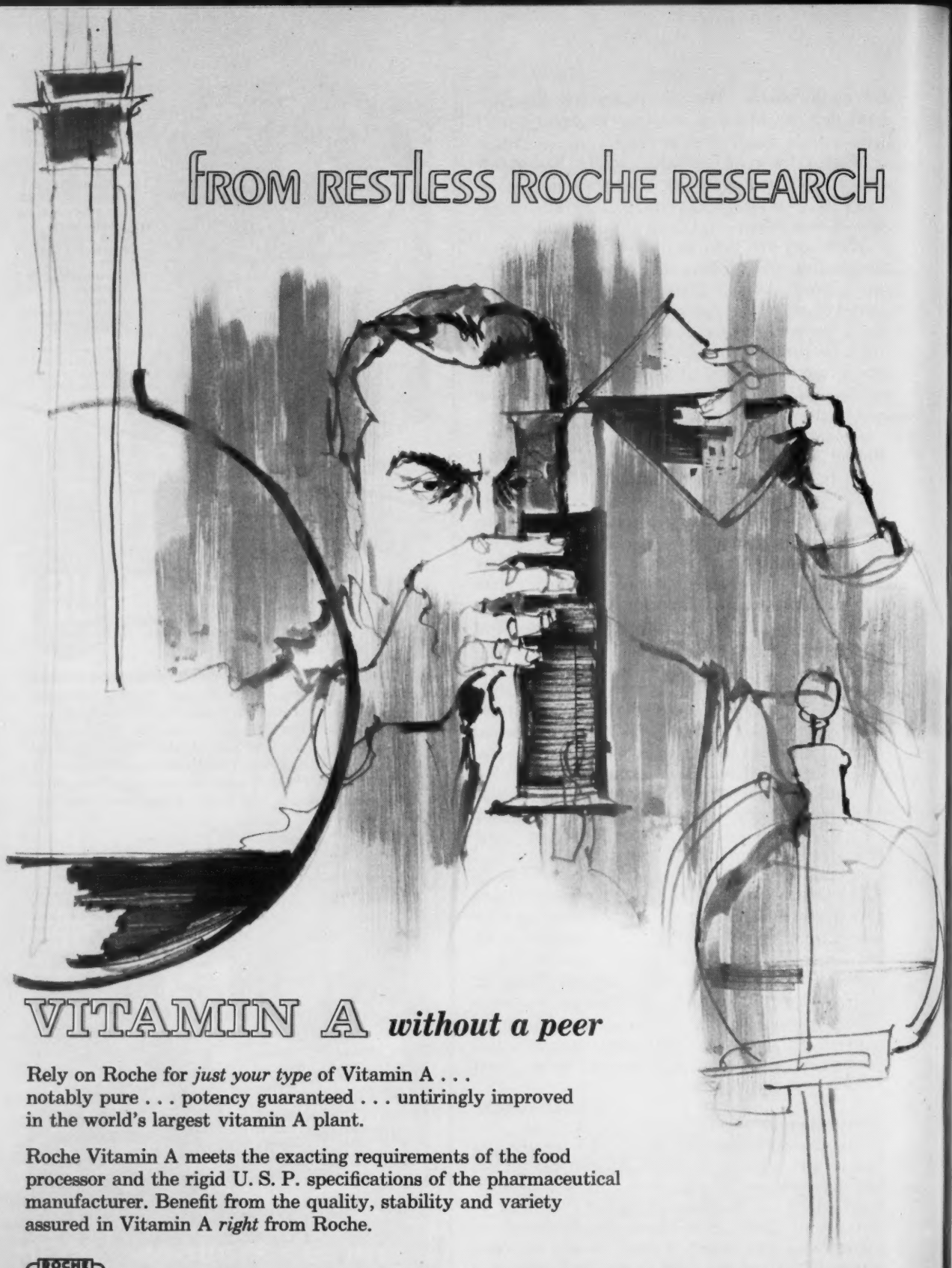

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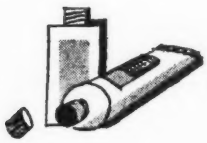

Advancing Therapy

New Anticonvulsant

1-(1-phenylcyclohexyl) piperidine · HCl was found by G. Chem and B. Bohner (*Proc. Soc. Exptl. Biol. Med.* 106: 632, 1961) to be a very effective agent in suppression of audiogenic seizures in mice. It was approximately 7 times more potent than Dilantin and phenobarbital and 25 times more potent than barbital. PCP was likewise the most active anticonvulsant in electrically induced tonic extensor seizures. Like Dilantin, on the other hand, PCP was devoid of any anti-clonic seizure activity in pentylenetetrazol-induced convulsions. A comparison was also made of the anticonvulsant effects of Dilantin, phenobarbital and barbital in audiogenic, pentylenetetrazol and electrically induced convulsions.

Non-Diuretic Hypotensive Agent

A. A. Rubin, F. E. Roth, M. M. Winbury, J. G. Toplis, M. H. Sherlock, N. Sperber, and J. Black (Schering) in *Science* 133: 2067, 1961, describe a class of chemical compounds, related to chlorothiazide, with the ability to reduce high blood pressure, but without diuretic action. The specific example, who synthesis is described, is 7-chloro-3-methyl-1,2,4-benzothiadiazine-1,1-dioxide. This compound is a modification of chlorothiazide in that the 6-chloro atom in the latter has been replaced by hydrogen, the 7-sulfamyl group has been replaced by chlorine, and the hydrogen atom on the 3-carbon atom has been replaced by a methyl group.

When this compound was administered orally to hypertensive dogs, it gradually caused a fall in blood pressure, without diuresis. Results were confirmed clinically, with the pressure reduction often exceeding that observed with the benzothiadiazine diuretics.

Other compounds of this type have been synthesized, in which the chlorothiabzide sulfamyl group has been replaced by hydrogen, alkyl, halogen, trifluoromethyl, etc., and exhibited hypotensive without diuretic activity. An extensive series of these compounds is being made and evaluated.

Comment: It has been thought that the blood pressure reducing action of the chlorothiazide compounds depended upon their diuretic action, their ability to remove excess sodium ions. This work seems to show that the ability to reduce blood pressure is related to the structure of the chemical compound, apart from the ability to induce diuresis, and possibly free from the harmful effects of removing too much potassium.

Serum Cholesterol Reduction

In the past few years much attention has been focused on the possibility of finding a thyroid analog possessing one desired property of the natural hormone without the other, undesired, ones. In particular, repeated attempts have been made to find a substance which would depress the level of cholesterol in the serum without raising oxygen consumption or in any other way embarrassing the heart.

Starr and Liebhold-Schueck (1953) and Starr (1958) found that in human beings the metabolic activity of D-thyroxine (DT_4) is very slight compared with that of L-thyroxine (LT_4), the "D:L ratio" varying from 1:2 to 1:100 according to the method by which the activities were tested. They then thought that DT_4 had little effect upon the serum cholesterol in the doses used, though a response was shown by one patient treated with 10 mg. daily. However, Greene and Farran (1958) differed from Starr in finding that the level of cholesterol fell when the dose of DT_4 was raised enough, a minimum of 4 mg. a day and in some patients 10 mg. a day being needed. They found that the minimum dose needed to improve the clinical condition of hypothyroid patients was 4 mg. daily, but that some patients failed to improve when given 20 mg. daily. In no case was the B.M.R. raised by a dose smaller than 4 mg., and most patients needed 10 mg. or more. The D:L ratio in different patients varied between 1:10 and 1:50 or more.

There is ample evidence that DT_4 lowers the level of serum cholesterol to normal in many cases; that the effective dose is from 2 to 10 mg.; that such doses rarely produce a significant rise in the B.M.R. and are in all other respects innocuous in the absence of ischemic heart disease; and that in this condition DT_4 should be used with care but is probably safe when given in a dose of 4 mg. daily.

Before this information became available R. Greene, J. F. Pearce, and D. F. Rideout (*Brit. Med. J.* 1961, p. 1572) had begun a trial of DT_4 in patients with hypercholesterolaemia, using the dosage suggested by previous work at New End Hospital (Greene and Farran, 1958).

D-Thyroxine (DT_4) in doses of 5 to 15 mg daily is capable of reducing an abnormally high level of serum cholesterol, usually into the normal range. This effect is produced by doses too low to affect the E.C.G. or B.M.R. In ischemic heart disease the drug should be used with caution, but no ill effects have been observed with doses not exceeding 5 mg. daily, and some patients in this category can tolerate larger doses. Some need a daily dose of 10 mg. to achieve the desired result. The drug is usually

satisfactory in cases of atherosclerosis and diabetes, but in idiopathic hypercholesterolaemia the number of patients treated is too small for conclusions to be drawn.

The question of whether any benefit accrues to the patient when the level of serum cholesterol is reduced to a normal level remains still to be answered.

Chlordiazepoxide

Chlordiazepoxide has three different pharmacological actions, viz., an antianxiety, a sedative, and a stimulating effect according to J. M. Tobin and N. D. C. Lewis (*J.A.M.A.* 174: 1242, 1960). The antianxiety action is not predicated on the sedative effect and is more specific than that of the tranquilizers so widely used, because with the latter drugs, in contrast to chlordiazepoxide, anxiety states are only relieved when depression of the central nervous system occurs, which manifests itself by obscured awareness and impaired mental acuity. The psychostimulating effect of chlordiazepoxide is apparent, among other parameters, in the lifting of anxious depressions.

It is concluded that chlordiazepoxide (Librium) is a most valuable agent which is more specific against anxiety and tension states than the tranquilizing agents.

Treating Parkinsonism

The multiplicity of drugs available for the treatment of the Parkinsonian syndrome bears testimony to the fact that no single remedy has been found to be universally successful. Recent reports (Doshay and Constable, 1959; Magee and Currier, 1960) have suggested that chlorphenoxamine hydrochloride (Clorevan) is a useful addition to the remedies available, but up to the present time no results have been reported of controlled trials of treatment using this remedy and utilizing the double-blind technique. In the paper by P. R. Uldall, J. N. Walton, D. J. Newell (*Brit. Med. J.* 1961, p. 1649) the results of such a trial conducted in a small series of patients are reported.

A controlled trial of chlorphenoxamine hydrochloride in the treatment of Parkinsonism, using the double-blind technique, is described. Twenty-one patients began the trial and 17 completed the full course of treatment. Subjectively seven of these 17 patients improved more with chlorphenoxamine than with the placebo, six improved more with the placebo, and four were unable to differentiate between the two treatments. Objective clinical assessment failed to reveal any significant effect of chlorphenoxamine upon rigidity and tremor, but this drug did produce a significant improvement in the ability to open and close the hands rapidly. No significant side-effects were observed in this series of cases.

Methyl phenidate (Ritalin) was given by A. M. Halliday and P. W. Nathan (*Brit. Med. J.* 1961, p. 1652) to patients with Parkinsonism. Four patients received it intravenously and 12 received it orally in a double-blind trial; those patients who obtained benefit from the drug given orally then received it in various doses, alone or in combination with other medication for Parkinsonism, in order to establish the optimal dosage.

The drug gave some patients an increased freedom of movement and reduced the rigidity; it had little effect on the tremor. The most marked effect was the improvement in mood.

Poldine Methosulfate

Antacids are widely used to control pain and promote healing in patients with peptic ulcer. Although antacids, provided they are taken often enough and in large quantities (Clark and Hunt, 1958), are unquestionably effective in maintaining a lowered acidity in the gastric contents during the day, they have no influence on the acidity of the gastric contents during sleep. Instead of neutralizing the acid after it is secreted, it would seem better to try to inhibit the secretion of acid continuously even when the patient is in remission. This paper by A. H. Douthwaite, T. H. Hills, and J. N. Hunt (*Brit. Med. J.* 1961, p. 1575) is concerned with treatment of patients with peptic ulcer along these lines, using an anticholinergic substance, poldine methosulfate (Nacton), which reduces by about one-half the gastric secretion of acid without producing noticeable side-effects.

Fourteen men with duodenal ulcers and two with gastric ulcers have been studied for a mean period of three years.

During this time they have been under treatment with four daily doses of poldine methosulfate just small enough to produce no side-effects. No tolerance developed.

The secretion of acid, as assessed at monthly intervals with test meals, was reduced by one-half by the drug as compared with the secretion with placebo tablets. There was no change in gastric emptying.

The patients were free of dyspepsia for four-fifths of the months of treatment. As compared with an average absence from work of four weeks per patient per annum before treatment, the mean loss of time from work was half a day per annum during the three years of the study. During this period the deformity of the duodenum was reduced in 6 out of 14 patients with duodenal ulcer.

Flurandrenolone

Flurandrenolone is a new corticosteroid which has a chemical formula of 6α-fluoro-16αhydroxyhydrocortisone-16,17-acetonide.

Substitution of an alpha-fluorine atom for hydrogen at the sixth position and a hydroxyl group at the 16α position, as well as the acetonide function linkage at both the 16α- and 17α-hydroxyl groups, are designed to impart maximum potency as an anti-inflammatory agent. At the same time, the salt-retaining property of the parent compound is decreased.

The anti-inflammatory action and clinical effectiveness of flurandrenolone a new topical corticosteroid, were studied by H. R. Gray, R. L. Wolf and R. H. Doneff (*Arch. Dermatol.* 84: 18, 1961). Flurandrenolone was shown to be effective in inhibiting the erythema usually produced by the primary irritant THFA (tetrahydrofurfuryl alcohol). The 0.05 per cent flurandrenolone was found to be more effective in inhibiting this erythema produced by THFA than 1 per cent hydrocortisone acetate. In a clinical study, 160 patients with various types of dermatoses were treated topically with 0.05 per cent flurandrenolone cream or hydrophilic ointment. These patients were followed from 1 to 18 weeks. Seventy-nine per cent showed good or excellent results, and 18 per cent showed fair results. No side-effects were noted. Flurandrenolone was found to be a safe and effective topical corticosteroid.

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(*Continued from page 213*)

ment. The only major side effect seems to be drowsiness.

Great hope had been placed on monoamine oxidase inhibitors for the treatment of the various forms of depression. This has been only partly fulfilled, and these drugs do not seem to have received the wide acceptance that had been expected. It remains to be seen whether the nonhydrazine monoamine oxidase inhibitor tranylcypromine (Parnate-Smith Kline & French) will be more effective and useful. An antidepressant agent of an entirely different chemical composition, Tofranil (imipramine-Geigy), has proved appreciably more effective in this respect. A related compound, amitryptyline, has recently been marketed by Merck Sharp & Dohme as Elavil. Early studies suggest that this drug produces few side effects. A combination of meprobamate and benactyzine under the name of Deprol is widely promoted to the medical profession by Wallace Laboratories.

Gastrointestinal Disorders

It is interesting that products used for ailments of the gastrointestinal tract should have received such frequent mention in my column in *Medical Science*. This is probably partly because this gut of ours consists of such an intricate piece of machinery, highly individualized and highly nervous. Everybody has different ideas of treating it. Consequently, we have every year a plethora of new drugs in the form of antacids, anticholinergics, laxatives and compounds intended for the treatment of intestinal infections and the various forms of diarrhea. We shall probably never be satisfied with what we have, because not every patient responds equally well to any one drug. In this connection one might also mention that three new appetite suppressants have been marketed. But real progress in this field can only be expected when we succeed in producing drugs that act as specific depressants of the appetite center. As the success of Metrecal has shown today, diet is still the overruling factor involved.

PMA CHARGES

(*Continued from page 158*)

lace reported its promotional expenditures for this month at less than $420,000—for 100,000 doctors, not 150,000. Another company was said by Dr. Bowes to have spent $3,600,000 on a direct mail drive in October, 1957; the company said it spent only $108,000. Dr. Bowes' testimony drew headlines like this: "Assails 24,247 Tons of Drug Ads, Critic Asserts 'Wastage' Could Build 53 Hospitals." Hill & Knowlton adds bitterly:

"Dr. Smith's rebuttal took place a week later and did not make headlines." (This is Dr. Austin Smith, president of the PMA.)

There are many more examples of this kind in the PMA-H&K report. They add up to an indictment not only of the committee but of the press. The PMA contends that a careful study of the transcript of the hearings shows conclusively that, despite the efforts of the committee to rig the show, the industry was able to present enough evidence to refute *all* the charges made against it. However—and this is the big however—the PMA alleges that the press swallowed the charges and ignored the refutations.

Some readers of this rebuttal by the industry may find a striking resemblance here to charges made some years ago by critics of the Communist investigating committee headed by the late Sen. Joseph McCarthy. Note, for instance, the following statement from the Hill & Knowlton brief:

"Attempts were made to discourage company witnesses from presenting comprehensive opening statements. The significance of this is of course that the opening statements usually contained the affirmative points and the documentation the companies were most interested in presenting publicly. And it stands to reason that the longer a company witness occupied the spotlight at the opening of a hearing, the less likely the subcommittee majority was to carry the headlines. Some witnesses resorted to ad-libbing condensations of their opening statements and thus lost much of the impact of their prepared material. . . .

"Sen. Kefauver sometimes protested the length of the opening statement submitted by others from industry. That the pressure of time was not so great on anti-industry witnesses is abundantly clear from the harvest of damaging publicity, which has been the only concrete accomplishment of the investigation."

This statement could have been lifted, word for word, from many of the denunciations of the McCarthy committee.

Is there a lesson here?

REGULATION AND GROWTH

(*Continued from page 167*)

cated, casually admitted to a neighboring plane passenger the product he was selling and the city he had just come from. This reached the ears of the company and that supplier was cut off immediately.

The point is that, without patent protection, a product developed by research, ingenuity or just pure luck, which happens to be highly desirable to the public and enables the innovator to build a large business, often finds its only protection from disasterous imitative competition in legitimate secrecy.

Some years ago, after the second Food and Drug Act was passed, there was a great deal of talk in Washington about compelling cosmetics, as well as

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pharmaceuticals, to list the ingredients of formulas on packages. One manufacturer, at that time the leading manufacturer of a hair dressing, decided to be very public-minded; he jumped the gun, changing the label and listing all the ingredients. It was one of the saddest experiences in the history of the cosmetic industry. Within three months practically every barber supply house in the United States had a duplication of the formula and some nasty competitive slugging took place for quite a few years—all as the result of a tip-off of an ingredient in the formula that had not previously been common knowledge.

The Package

To listen to witnesses before the Senate judiciary subcommittee investigating packaging and labeling, anyone would think there is a deliberate conspiracy to deceive the consumer. While business innocently has believed that packaging is an essential part of the miracle of distribution created in America, not so, the witnesses selected to appear before this Senate committee. While business has universally agreed that the package must substitute for personal selling in self-service retailing and thus be fully informative, not so these witnesses. According to one witness: "Now there is no salesman any more to tell you what you are getting. In supermarkets, the package is the salesman. The more space he takes up on the shelf—that's the reason for giant and jumbo, not economy—the louder his letters scream at you, the sooner you will buy him." And another witness: "The old-fashioned butcher was often accused of weighing his thumb. We want to be sure that today's consumer isn't still buying that thumb, but in a fancy package."

And so it goes—claims that consumers are paying for empty space, are subjected to microscopic labels, oversized packages and dubious claims of quality.

Investigations

Reports have it that the Federal Trade Commission is establishing a new method of investigation and enforcement with its so-called mail-order investigation.

It is all very well to send a mail-order questionnaire to companies, asking them to declare specifically under oath all of their different trade practices, but in a sense this makes many people in a difficult competitive spot damned if they do and damned if they don't.

A great many questionable practices have been developing in America in almost every phase of business, including advertising and selling, and to a far less extent, packaging and labeling, and, it may be said, in almost every business and industry from Wall Street to retailing. Many of these practices deserve public examination, public debate and, in some

(*Continued on page 237*)

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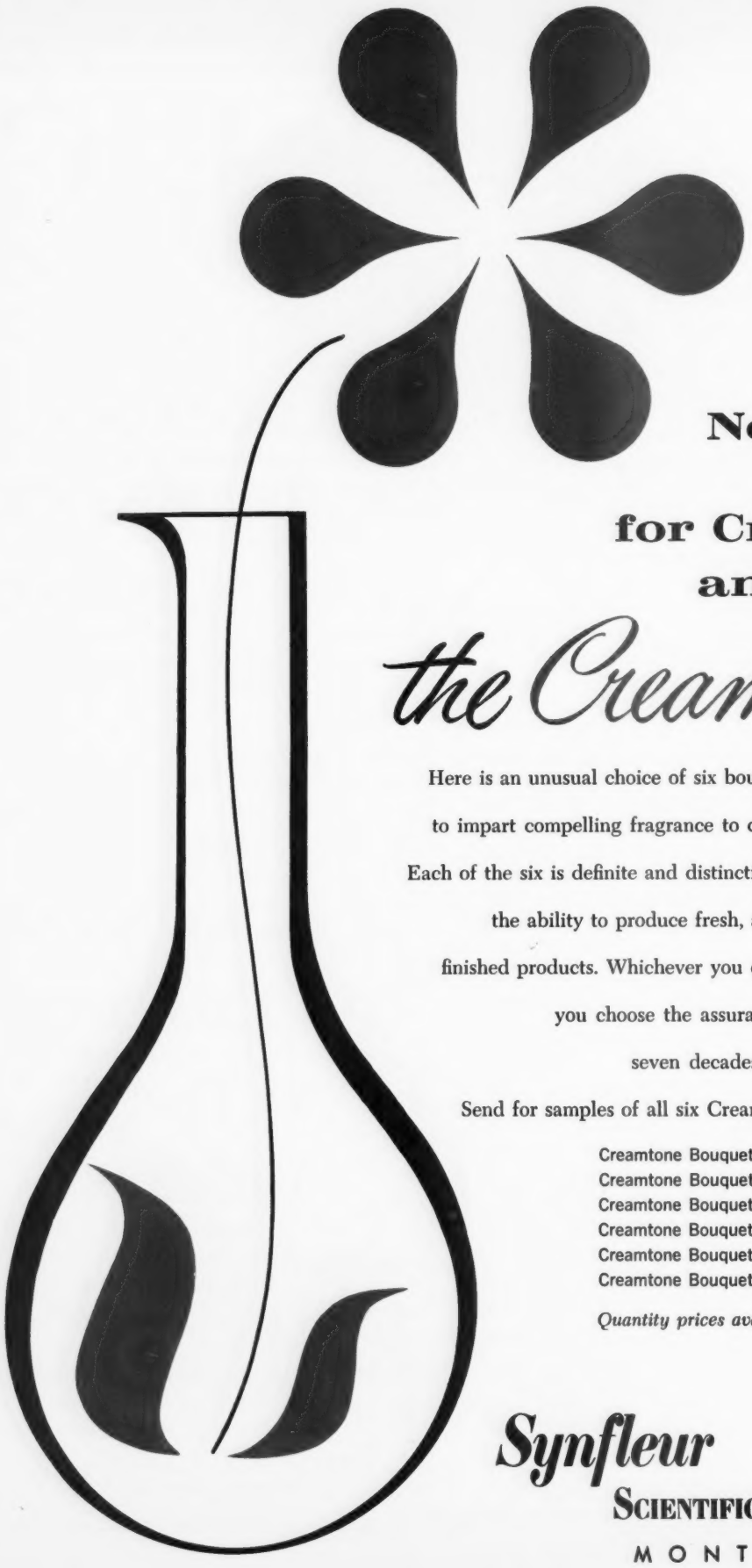

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Patents and Trademarks

BY THOMAS CIFELLI, JR., PATENT ATTORNEY*

Drug Patents in Jeopardy

The good old trite saying that the only certain things in life are death and taxes should be amended to include attacks on the patent system in this country.

Thus far, Congress has resisted all serious proposals which would seriously damage the system, and these have been many. It should be said that Democratic and Republican national administrations have always in the past supported the patent system: President Lincoln said, "The patent system has added the fuel of interest to the fire of genius." Not to be outdone, President Franklin D. Roosevelt stated: "The American patent system has promoted countless applications of the arts and sciences to the needs and well-being of our people." The present comprehensive patent law was passed during the administration of President Truman in 1952 and, although it represents a complete re-evaluation of the patent system, including proposals that informed people felt would seriously damage it, the act was a vindication of the patent system as it has developed in this country, in that none of the damaging proposals were adopted.

However, another attack, which may well be the most serious yet on the U. S. patent system, has recently been started. Unlike former attempts to weaken the system, the present one does not attempt to cut across all industries. Rather, it has singled out the drug industry. Obviously, the chances of success in a "divide and conquer" attack are greater than when one takes on all comers. Obviously, too, the attempt is not labeled an attack, nor do the sponsors of the legislation, which may hurt the patent system grievously, believe that their legislation will have such an effect.

The attack referred to is the one under very impressive leadership of Senator Kefauver in the U. S. Senate and Congressman Celler in the House of Representatives. It is an outgrowth of the hearings of 1959 and 1960 by Senator Kefauver's Senate Anti-Trust and Monopoly Sub-Committee. During these hearings, 13 volumes of testimony were taken by the Kefauver committee. Senator Kefauver has summarized the results of these hearings by saying that they showed that the cost of drugs was too high and that there was a direct relationship between the high cost of drugs and the manner in which drugs are advertised and sold.

As a result of the Senator's belief, it certainly came as no surprise to the drug industry that legislation to correct the alleged abuses was to be offered. However, the singling out of the patent system as the "bad-boy" in the picture, to the extent that it has been singled out, probably was something of a surprise.

We shall leave to the drug industry and to the patent lawyers, in general, the job of evaluating the various specific proposals contained in Senator Kefauver's bill, S-1552, introduced April 12, 1961. Here we shall consider only some of the proposals in broad terms, as these may not only affect the drug industry, but, if actually enacted into law, will unquestionably serve as precedents for extending the restrictions to other industries.

Sherman Act amendment. S-1552 would amend Section 2 of the Sherman Act by adding the following as a new section:

"Sec. 7. (a) For the purposes of sections 1 and 3 of this Act, every contract, combination, or conspiracy whereby any party thereto undertakes or has undertaken to (1) withdraw or cause to be withdrawn any pending application for any patent for any drug, (2) concede priority of invention to any other applicant for a patent for any drug in connection with any agreement or understanding to (a) split royalties between the applicants for such patent, (b) grant more favorable royalty rates to any other such applicant than to anyone who was not an applicant for such patent, or (c) to grant patent licenses only to other applicants for such patent, or (3) refrain from granting or to induce any other person to refrain from granting any license under any patent granted, or which may be granted for any drug, shall be an unlawful restraint of trade or commerce.

"(b) As used in this section, the term 'drug' has the meaning given thereto by section 201 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 321).

"(c) Nothing contained in this section shall be construed to limit in any way the application of section 1 or section 3 of this Act."

Senator Kefauver stated that the purpose of this section is to restore free competition in drug patents, and to result in patents being issued to inventors on the merits of their claims, instead of through agreements with drug manufacturers.

Opponents of the bill claim that this section could only result in prolonging patent prosecution, increasing expenses and delaying the issuance of patents, thereby in turn diminishing research in the drug field. In fact, opponents point out that interference settlement agreements usually *increase* competition by providing additional sources of supply. Also, it is contended that forcing applicants to continue prosecuting patent applications that have little chance of being issued into patents will actually play into the hands of large and financially strong corporations, and will operate at the disadvantage of individuals and smaller organizations. Then too, singling out the drug industry as one where special treatment under the criminal Sherman Antitrust statute is concerned is said to be unsound for various reasons, one of them being that the proposed amendments are not directed to the curing of a problem peculiar to the drug industry, but are applicable to

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practices used in every industry where innovations are taking place. It also pointed out that, to the extent that these restrictions are designed to prevent improper practices such as conspiracies to issue patents to persons not the first inventors, the legislation is unnecessary, because these actions are already considered to be illegal under existing laws.

Patents for drugs. The Kefauver bill proposes to make the following changes with respect to patents in the drug field:

"Sec. 3. (a) Section 100 of part II of title 35 of the United States Code (relating to the patentability of inventions and grant of patents) is amended by adding at the end thereof the following new subsection:

"(e) The term 'drug' means any drug (as defined by section 201 of the Federal Food, Drug, and Cosmetic Act) which may be dispensed only in conformity with the requirements of paragraph (1) of section 503 (b) of the Federal Food, Drug, and Cosmetic Act."

(b) Section 101 of that title is amended by adding at the end thereof the following new paragraphs:

"(1) No patent may be granted for any molecular modification or other modification of any patented or unpatented drug or for a combination of two or more drugs unless (A) the Commissioner has determined that the change from the prior art made by that modification or combination would not have been obvious to a person having ordinary skill in the art, and (B) the Secretary of Health, Education, and Welfare has determined that the therapeutic effect of such modification is significantly greater than that of the drug so modified or that the therapeutic effect of such drugs when taken in combination is significantly greater than the therapeutic effect of those drugs when taken separately.

"(2) The specification accompanying any application for a patent for a combination of two or more drugs, or for any drug involving a molecular modification or any drug or combination of drugs, shall contain a full and complete written description of the drugs so combined or the drug or combination of drugs so modified. Upon receipt of any such application, the Commissioner shall transmit to the Secretary of Health, Education, and Welfare a request for his determination upon the question whether the combination or modification so described will have therapeutic effect significantly greater than that of the drugs so combined or the drug so modified. Upon receipt of any such request, the Secretary shall conduct or cause the applicant to conduct or cause to be conducted such research as may be required for the making of that determination. The applicant shall furnish to the Secretary such clinical data and other information as the Secretary may require for his determination.

"(3) Whenever the Secretary shall determine that any combination of drugs or molecularly modified drug does not have the therapeutic effect prescribed in subparagraph (1) hereof, he shall so notify the applicant in writing by registered mail addressed to the applicant at his last known address in the records of the Secretary. Within thirty days after the date of such notice, the applicant may request in writing the Secretary to hold a hearing before transmitting his final determination to the Commissioner. Such request shall specify the grounds on which the request is based and shall be accompanied by any additional information which is material and there were reasonable grounds for failure to adduce such information before the Secretary theretofore. After such hearing the Secretary shall enter his final determination. The Secretary shall cause to be kept a record of all information coming before him and his determination thereon.

"(4) The Secretary shall transmit in writing his final determination to the Commissioner which shall be made a formal part of the file record of the patent application. The determination so made by the Secretary of Health, Education, and Welfare with respect to any such combination or modification shall be accepted as conclusive in any determination made by the Commissioner. The determination of the Secretary shall be sustained in any court if based upon a fair evaluation of the entire record before the Secretary."

Senator Kefauver justified the amendment in the following language:

"Section 101 of title 35 of the code delimits those inventions which are patentable. Section 3(b) of the bill adds to section 101 new provisions with respect to the patentability of two kinds of prescription drugs. Those drugs consist of first, any drug which is a combination of two or more drugs already in existence, whether patented or unpatented; and second, any drug which is merely a molecular or other modification of an existing drug.

"The bill simply says that such a modification of a drug or a combination of drugs is not patentable unless the Secretary of Health, Education, and Welfare has determined that the therapeutic effect of the modified drug or combination of drugs is significantly greater than the therapeutic effect of the drug before modification, or the drugs in combination when taken separately. Unless there is such a greater therapeutic effect, the public gains nothing from having this modification or combination placed on the market. Unless these conditions are met, no new drug is discovered, and the patent monopoly should not be granted.

"In order to make effective these provisions as to patentability of combination or modified drugs, the Commissioner of Patents shall request the Secretary to make determinations required in the bill and the Secretary is authorized to do so.

"In our drug hearings, it has been shown that many U. S. patents have been issued on slight molecular modifications of drugs about which medical experts testified there was no difference in the therapeutic effect as compared with their predecessors already on the market. Indeed, in some instances, their therapeutic effect was no greater while their side effects were more serious. Yet manufacturers, after obtaining such patents and even after the application is filed, are in position to and do put on costly promotion campaigns to sell doctors on the new drug's supposed advantages. Hearings have shown by recognized authorities in this field that such claims often are unwarranted, or at least very doubtful. This situation permits the manufacturer to continually extend his

(*Continued on page 234*)

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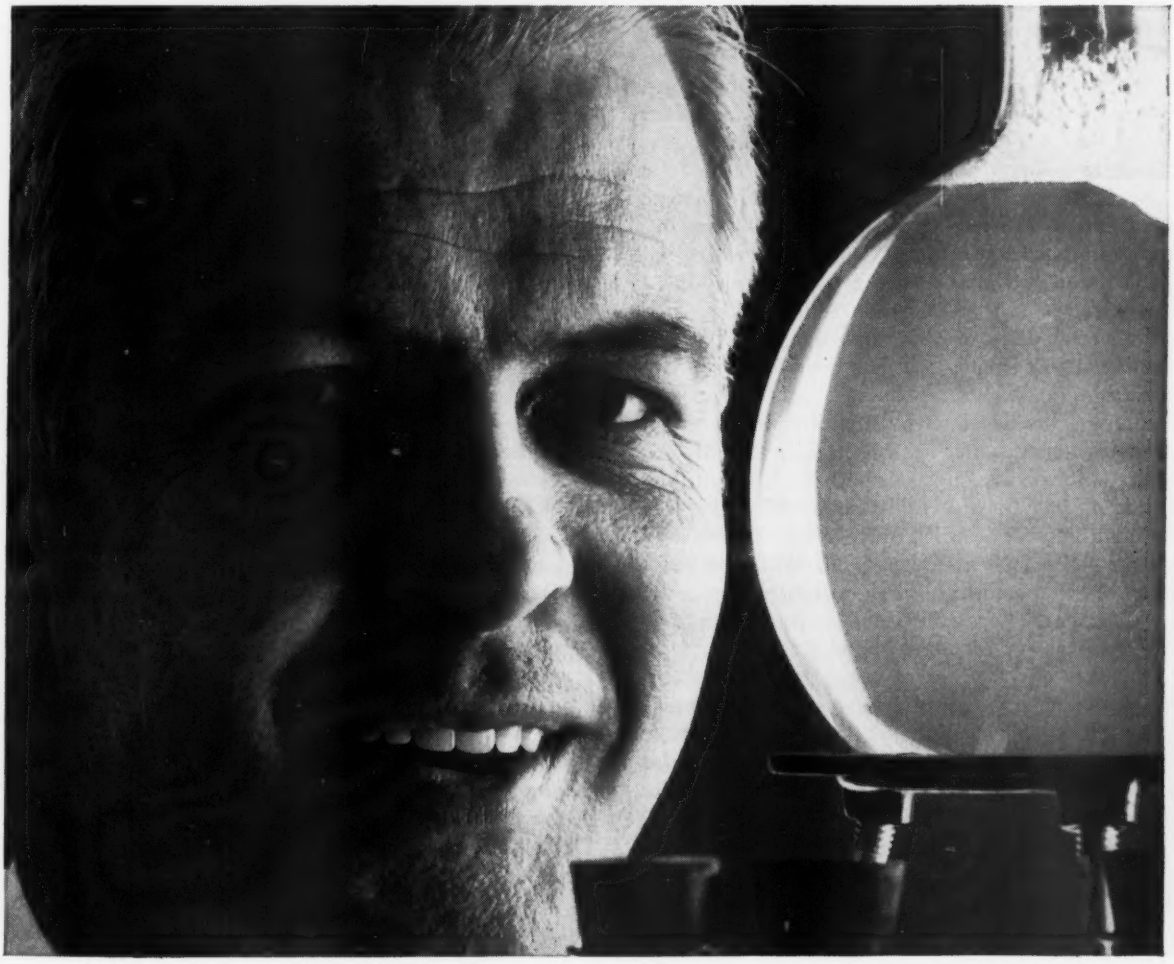

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4223

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patent period by such new patents and to remain insulated from competition by patent protection. It affords new occasions for extensive promotions of so-called new drugs which are not in fact novel.

"New drugs, if truly more efficacious to the patient, are of great interest to doctors, patients, and all of us. Significant advances have been made in recent decades, and we are fortunate in having these available. At the same time, it is unfair to the public and to the great many doctors who are in no position to determine the truth, to permit the grant of patents unless their added therapeutic value has been determined by experts under the direction of the Secretary. In the public interest, they should make the determinations before a patent monopoly has been vested in the manufacturer. We are not dealing with gadgets, but products of health, life, and death."

Opponents of the legislation will doubtless point out that the effect of this amendment will prevent the issuance of patents unless *significantly greater therapeutic effects* can be shown. This will in effect discourage the development of minor improvements or improvements that are in the direction of lower toxicity, fewer side effects or perhaps different therapeutic effects. In effect, this too would reduce competition, because it will reduce the incentive to put on the market patented drugs that, while not possessing whatever is meant by "significantly greater therapeutic effects," are still useful for specific purposes and perhaps for economic reasons.

Another effect of these patent proposals is to divide the responsibility in drug cases for determining patentability between the Commissioner of Patents and the Secretary of Health, Education and Welfare, not to mention the certain increase in the personnel (bureaucracy) of HEW.

The patent proposals also raise many questions concerning the evaluation of the drugs. Presumably, it will be necessary to test the new drugs along with old drugs. This raises a very serious question concerning medical ethics, because the old drugs probably would be inferior and the impact of having a doctor intentionally administer a drug thought to be inferior when one thought to be superior is at hand cannot be minimized. Medical malpractice conceivably could follow. As a practical matter, clinical evaluation of new drugs might be impaired.

Special term for drug patents involved in interferences. Section 3(c) of the Kefauver Bill is as follows:

"A patent issued after proceedings under this section for any drug which requires a new drug application under section 505 of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 355) shall be issued as of the effective date of that new drug application; in case of drugs not requiring such a new drug application, a patent shall be issued effective as of the date upon which the patent application therefor was duly filed by the prevailing party."

This would amend the patent act to provide that patents issued after interference proceedings would have an effective date as of the filing date of the prevailing party's application where the patent was for drugs not requiring a new drug application, and as of the effective date of the new drug application in cases where that is required.

Senator Kefauver justified this provision by his assertion that frequently the issuance of drug patents was long delayed where interferences were involved.

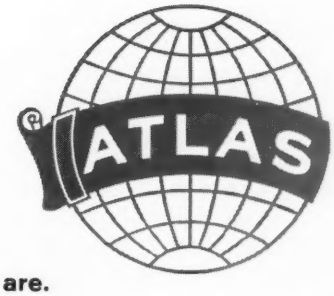
Compulsory licensing and know-how. Compulsory licensing is provided for in the Kefauver bill by Section 3(d) reading in part as follows:

"Every patent for a drug issued after the effective date of this paragraph shall contain a grant to the patentee, his heirs or assigns, of the right to exclude others from making, using, or selling that drug for the term of three years from its effective date, and for any additional period (not exceeding fourteen years) during which the holder thereof grants to each qualified applicant an unrestricted license to make, use, and sell that drug. If, during any such additional period, the holder of such patent fails to grant any such license to any qualified applicant within ninety days after receipt of a written request therefor made by that applicant, the holder of that patent shall file with the Commissioner a written report of that fact. After receipt of any such report from the holder of any such patent, or after a determination made by the Commissioner on his own motion or upon complaint made by any applicant to the effect that the holder thereof has failed to grant to any qualified applicant any such license under any such patent within ninety days after receipt from that applicant during any such additional period of a written request for such license, the Commissioner shall cause notice of the cancellation of that patent to be published in the Federal Register and endorsed upon all copies of that patent thereafter distributed by the Patent Office. In this paragraph—

"(1) the term 'qualified applicant,' when used with regard to any application for license to make, use, and sell any drug, means any persons who holds an unsuspended and unrevoked license issued under section 508 of this Act for the manufacture, preparation, or propagation of that drug; and

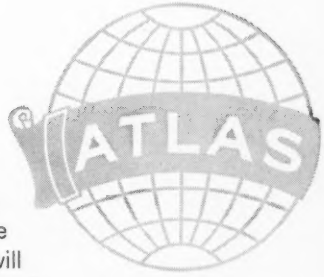
"(2) the term 'unrestricted license,' when used with regard to a patent for any drug, means a license which (A) includes a grant of all technical information required for the safe and efficacious manufacture, preparation, or propagation of that drug, and (B) contains no condition, limitation, or restriction upon the manufacture, use, or sale thereof other than payment by the licensee of a royalty not exceeding 8 per centum of the gross selling price received by the licensee for the sale of that drug, and (C) the royalty rate is not discriminatory between

(*Continued on page 236*)

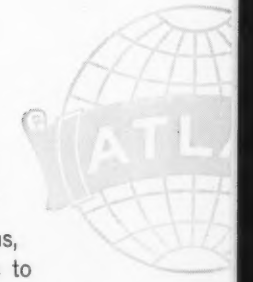


We've been "Atlas" for 49 years. We still are.

But, our official name "Atlas Powder Company" has become less and less descriptive as—bit by bit—we have become increasingly a manufacturer of chemicals. Our "Sorbo" sorbitol solution, "Span" and "Tween" emulsifiers, "Darco" activated carbons, and "Atlac" polyester resins are particularly well known and widely used.



Three recent moves, which have been developing during the past two years, will emphasize our chemical nature even more. We are building a polyols plant which will produce initially about 50 million pounds per year of polyhydric alcohols—including glycerin, ethylene glycol and other glycols. Work is almost completed on a new $15,000,000 facility to manufacture anhydrous ammonia, urea, and related products which is owned equally by Atlas and The Standard Oil Company (Ohio). We have just completed a merger with The Stuart Company, manufacturer of ethical pharmaceuticals.



While "Powder", or explosives, are still important to us, Atlas' growth in the chemical area has caused us to change "Powder" to "Chemical" and to gather all our activities together under "Industries". So, from now on, our official name is Atlas Chemical Industries, Inc. We hope you like it—and that you will continue to call us "Atlas".

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CHEMICALS DIVISION—polyols, emulsifiers, polyester resins, activated carbons, specialty chemicals. ■ **EXPLOSIVES DIVISION**—high explosives, blasting agents, blasting supplies; nitrogen chemicals; ordnance products. ■ **INTERNATIONAL DIVISION**—export; manufacturing and marketing operations outside of the United States. ■ **THE STUART COMPANY DIVISION**—ethical pharmaceuticals.

"SORBO", "SPAN", "TWEEN", "DARCO", "ATLAC": REG. TRADE MARKS, ATLAS CHEMICAL INDUSTRIES, INC.

(*Continued from page 234*)

licensees when an identical compound is sold for different uses or in different forms;

"(3) the term 'effective date,' when used with regard to a patent for any drug, means (a) in the case of a new drug (as defined by section 201 of the Federal Food, Drug, and Cosmetic Act), the effective date of the application filed with respect thereto under section 505 of that Act, and (b) in the case of any other drug, the date on which application was made for that patent."

Senator Kefauver believes that this provision is rather generous because it would grant in a drug patent the right to the patentee to exclude others from making, using or selling the patented drug for a period of three years from the date of filing the patent application, and for an additional period not exceeding 14 years during which the patentee grants to each qualified applicant an unrestricted license to make, sell and use that drug. In this connection, Senator Kefauver said to Congress:

"If Congress is to accomplish anything of substantial benefit to our sick and afflicted people in the cost of medicine, we must pass legislation which will encourage a more competitive market in drugs. To me, there appears to be two alternatives—price control or providing for freer competition. I am opposed to price controls. The better course is within the framework of our free enterprise system."

Opponents can be expected to assert not only specific objections to the compulsory licensing provisions but also objections based on the general principle that compulsory licensing is a step backward. They doubtless will point out that a vital aspect in the United States patent system has been the freedom of the patentee to determine how he is to receive his compensation in exchange for his contribution. Also, it will be noted that time and time again legislative proposals have been made to Congress to alter this freedom and with but one exception (Atomic Energy Act) each effort has been defeated. They will also doubtless point out that compulsory licensing will substantially reduce the incentive to invent and decrease rapid dissemination of technical information. The incentive to develop a new item which the developer must share with his rivals is not as great as the exclusive incentive of the present patent law. It would seem, the argument runs, that if a firm knows in advance that it has legal access to any new products and markets developed by its competitors, that firm would probably let others bear the risk of research, and consequently new discoveries would be fewer. If any firm did continue to do research, it would resort to secrecy rather than to quick publications under the protection of the patent system as it now operates.

To get an understanding of what the compulsory licensing provisions of the Kefauver bill would do to research for new drugs let us consider, as just one example, the story of Merck's Diuril. In an address delivered at the Symposium on the Effects of Patents on Research, National Research Council, National Academy of Sciences, Washington, D. C., June 14, 1961, John P. Connor, president of Merck made the following points:

"After more than fifteen years of research by Merck men and women trained in twenty-five different specialties, including a year of testing the new compound on animals, fourteen more months of testing on patients by 1,000 clinical physicians in this and eighteen foreign countries and extensive chemical engineering development to learn how to manufacture a safe and effective product on a mass production basis-after all this, we launched Diuril on the market. We then spent several million dollars to inform physicians about the drug's medicinal properties—good and bad—perfected our method of manufacture, and invested nearly $10 million in manufacturing facilities here and abroad to satisfy the world-wide demand.

"Three years after we had introduced Diuril on the market Senator Kefauver would have the government step in and order us to turn over everything we had learned to any number of our 1,300 competitors in this country and—even more serious—to any foreign producer who can get a license to sell in the U. S.

"The result would be to reward us for our eighteen years of work and a magnificent contribution to the health of the American people by literally forcing us to subsidize our competitors here and abroad. These 'freeloaders' could get into the business by merely writing a letter. They would have contributed nothing to the research, shared none of the risks and paid for none of the original costs. Their maximum investment, if any, would be the cost of duplicating our plant after we turned over our blueprints and technical data to them. Most of those 'coattail riders' would not make any investment at all but would merely put the drug—probably from a low-cost foreign licensee—in bulk for repackaging and sale to an already established market.

"This is a most unusual way to promote progress. The Senator's proposal is that those companies that do research subsidize those that do none so that the imitators can sell below the costs of the creators. It reminds one of what Voltaire had Candide say while observing the incentive system of 18th century in England. The British had just hanged an admiral. 'In this country,' Candide explained, 'it is found good, from time to time, to kill one admiral in order to encourage the others.' "

Summary. S-1552 represents a serious attempt to weaken the protection of patents in the U. S. drug industry. The drug industry has a vital stake. So have all Americans.

RECENT PATENTS

2,983,648—**Rhein-Chemie (Germany) — Process Of**

(*Continued from page 248*)

(*Continued from page 229*)

cases, correction. This is a good, healthy way of running America and is fully compatible and even necessary in our free enterprise system.

However, it seems just now that, for every Government agency in Washington, the hunting season is open on business.

To put it mildly, if this spirit intensifies, business will be fully justified in hesitating and assuming a defensive position.

This is hardly the formula for growth and prosperity.

GERANIUM OIL

(*Continued from page 172*)

vegetables and grapes, which are well suited to the "sun valley" of Algeria. Then too, the political turmoil and the warfare in this area have reduced the size of the geranium fields. Oil is still available from Algeria but no one knows what price it will bring. Currently it is selling on spot at about $19 per pound, whereas the Reunion oil is quoted at about $17.

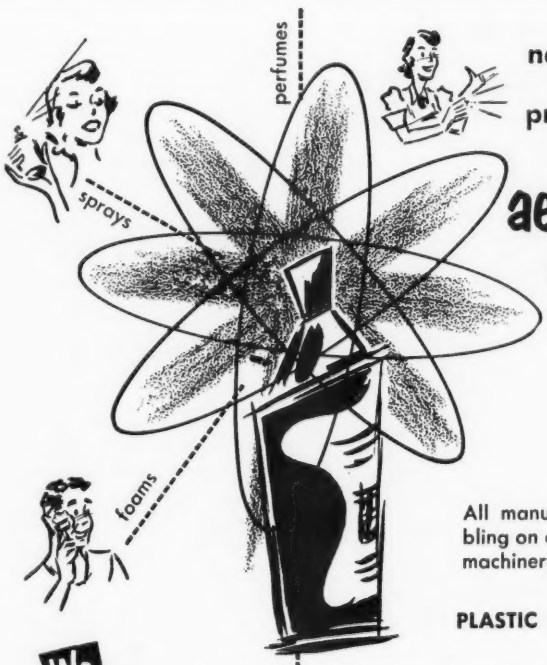
A noteworthy contributing factor in evaluating the future position of geranium oil is the growing industry in Japan, where oil of good quality is now being produced. Reliable information indicates that in 10 years Japan may be producing as much as from 10 to 15 tons annually.

Very little geranium oil from Kenya is sold in the United States but, the Department of Commerce, Business and Defense Services Administration indicates that this source may eventually prove substantial. According to the Essential Oil Section of the Tropical Institute, London, geranium oil from Kenya has come to be considered of the highest quality, an opinion reportedly confirmed by one of the largest users of geranium oil in the United Kingdom. The Institute report went on to say that the sustained high price of the oil in recent years has aroused considerable interest among the farmers of Kenya, where the highlands are said to be eminently suitable for geranium cultivation. However, traders have been interested only in supplies closely resembling the Reunion variety.

On the Tropical Institute's recommendation, cuttings of the Reunion variety were obtained from Reunion in exchange for tea seed, and they were propagated by the Department of Agriculture in Kenya. Rapid progress has been reported in the two years since the Institute in London received the first sample of oil distilled from these plants, and a sample received from Kenya early in 1960 was found to be satisfactory.

This crop should prove worthwhile for African

(*Continued on page 242*)



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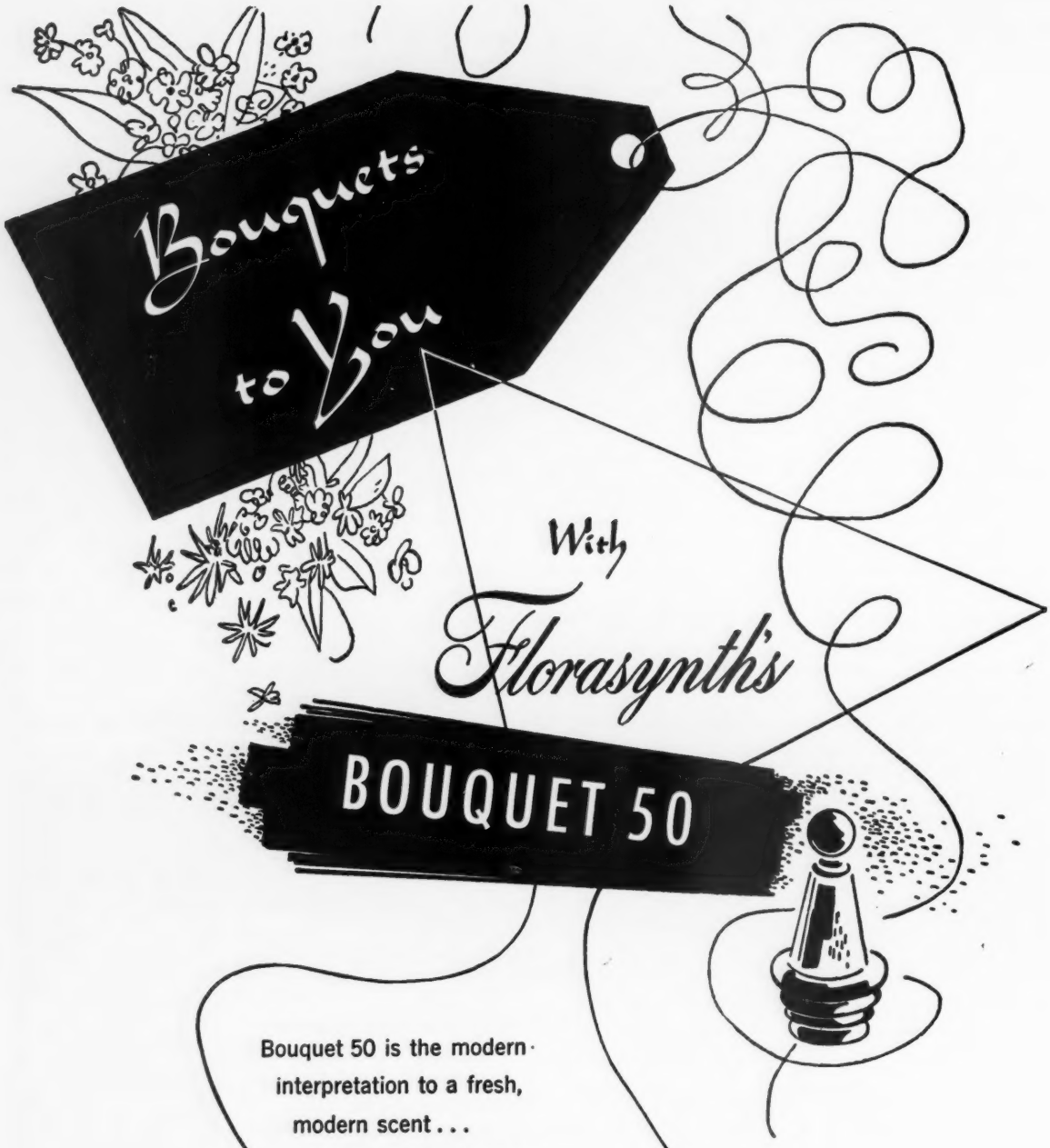

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Compounder's Corner

Wheat Germ Oil

According to H. Neumann (*Parf. Cosm. Sav.* 4: 70, 1961), of all vegetable oils, wheat germ oil is best suited for the preparation of the widest variety of cosmetics. It must not be used in its crude form but be freed from acidity to prevent skin irritation. The cosmetic value of the grain germ oils lies in their high content of essential fatty acids of the type of vitamin F and their vast spectrum of activity. Vitamins and phyto-estrogens contained in the germ oils are absorbed by the skin; they improve cell blood circulation and regulate the hydration of tissue. Beside deacidified wheat germ oil, tested and known for decades, a mixture of wheat and corn germ oils is interesting in cosmetics as a "vitaminized oil." The use of rice germ oil is also new in cosmetics and has approximately the same activity as corn germ oil. It may well be said that all germ oils, because of their origin and the chemical composition of their fatty acids, are particularly suitable for the development of cosmetic specialties of all kinds and are frequently superior to other vegetable oils.

Glyceryl Guaiacolate

Glyceryl guaiacolate, expectorant and antitussive, is now being produced by the Heyden Chemical Division of the Heyden Newport Chemical Corporation. The use of this compound is increasing in both prescription and proprietary cough preparations. It is effective at low dosage levels without undesirable side effects, and is soluble enough to be formulated in syrups as well as in tablets and capsules. Other Heyden creosote and guaiacol derivatives include calcium creosote NF VII, potassium creosote sulfonate, creosote NF, guaiacol NF X, guaiacol carbonate, and potassium guaiacol sulfonate.

Alkyl Myristate

Alkyl Myristate is being offered by A. Boake, Roberts & Co., Ltd., London. It is a colorless and odorless liquid, somewhat more viscous than isopropyl myristate and somewhat less so than cosmetic mineral oil. The compound is oily in nature, spreads easily on the skin and is absorbed to some extent to leave a residual film which gives the skin a feeling of suppleness and smoothness. It is suggested for use in cold creams, foundation creams and also in non-aqueous products such as lipsticks and eye makeup. Itis completely miscible with castor oil and proylene glycol, but does not give a clear solution with ethyl alcohol. It has less adverse effect on plastics than isopropyl myristate.

Elvax Wax Modifier

DuPont has introduced a new series of vinyl resins under the trademark Elvax, a copolymer of ethylene and vinyl acetate. Due to their high molecular weight and good compatibility, Elvax vinyl resins impart toughness, flexibility and adhesion to paraffin wax and other brittle low molecular weight materials. For instance, 10 per cent Elvax per volume of paraffin greatly increases the ruggedness, flexibility, and heat-sealing properties of the mixtures. With 30 per cent or more, the mixture performs more like a plastic than a wax. The Du Pont Electrochemicals Department is so encouraged by the success of this material with paraffin wax they are considering the general problem of compatible, high molecular weight additives for improving the performance and end uses of other waxes, low molecular weight resins, rosin and rosin derivatives.

Benzoyl Formic Acid and Methyl Ester Offered Commercially

Benzoyl formic acid (phenyl glyoxylic acid) and methyl benzoyl formate are now available in development quantities from S. B. Penick & Company, New York, and commercial quantities can be supplied on relatively short notice.

These bifunctional compounds should be useful as intermediates for pharmaceutical, veterinary and agricultural chemicals. Intermediates of similar chemical structure have been used in local anesthetics, anticholinergics, sunscreening agents, spasmolytics, insect repellents and hair-waving compositions.

Deodorants and Antiperspiration

Axillary odor is essentially due to microbial decomposition of the excretion from the apocrine glands according to F. Hermann (*J.A.M.A.* 176: 1063, 1961). It can often be reduced by the antimicrobial action of such locally applied agents as aluminum salts, hexachlorophene, or antibiotics. Frequent washings with soap and water, as well as shaving, likewise counteract the undesirable odor by interfering with the accumulation of odoriferous material.

It is still somewhat controversial to what extent a significant decline of copious axillary sweating can be obtained by the local use of antiperspirant preparations. Experimentally, a decline is demonstrable under the influence of most aluminum salt preparations. An aqueous solution, for example, of 12 per cent to 20 per cent aluminum chloride is usually effective, especially when a suitable wetting agent such as alkylated aryl polyether alcohol (Triton X 100) is added. There are wide individual variations in the susceptibility to this effect, and by and large the effect is the less apparent, the more intense the hyperhidrosis. •

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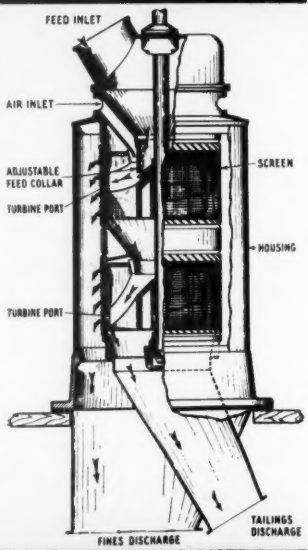

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COMING EVENTS . . . .

AUGUST

14-18 **Canisius College Fifth Annual Infrared Spectroscopy Institute,** Buffalo, N. Y.

20-24 **American Veterinary Medical Assn.,** annual convention, Sheraton Cadillac Hotel, Detroit, Mich. (A.V.M.A., 600 S. Mich. Ave., Chicago 5, Ill.)

21-25 **Gordon Research Conference,** Food and Nutrition, Colby Junior College, New London, N. H. (Dr. W. George Parks, University of Rhode Island, Kingston, R. I.)

22-25 **International Pharmacological Meeting** (first), Stockholm, Sweden

28 **Gordon Research Conference,** Cancer, Colby Junior College, New London, N. H. (See above.)

SEPTEMBER

3-8 **American Chemical Society,** annual fall meeting, Chicago, Ill. (A.C.S., 155 Sixteenth St., N.W., Washington 6 D.C.)

4-8 **International Congress of Pharmaceutical Sciences,** Scientific Section, Pisa, Italy (Prof. Dott. A. E. Vitolo, General Secretary, Federation Internationale Pharmaceutique, Piazza Carrara, 10, Pisa, Italy)

5-8 **National Chemical Exposition,** concurrent with the fall national meeting of the **American Chemical Society,** The Chicago Ampitheater, Chicago, Ill. (Chicago Section, A.C.S., 86 Randolph St., Chicago 1, Ill.)

11-15 **Instrument Society of America,** fall conference and exhibit, annual meeting, Los Angeles, Calif.

12 **Society of Cosmetic Chemists,** Chicago Chapter meeting, (S.C.C., 2 East 63rd St., N. Y. C. 21)

12 **Synthetic Organic Chemical Manufacturers Assn.,** luncheon meeting, Hotel Roosevelt, N. Y. C. (S.O.C.M.A., 261 Madison Ave., N. Y. C. 16)

14 **Pharmaceutical Advertising Club,** meeting, Roosevelt Hotel, N. Y. C. (P.A.C., 489 Fifth Ave., N. Y. C. 20)

14-17 **Drug, Chemical & Allied Trades Assn.,** annual meeting, Pocono Manor Inn, Pocono Manor, Pa. (D.C.A.T.A., 1 Liberty St., N. Y. C. 5)

17-20 **First Annual Conference on Pharmaceutical Analysis** sponsored by the Extension Services in Pharmacy in cooperation with The School of Pharmacy, University of Wisconsin, (Richard S. Strommen, 301 Pharmacy Building, Univ. of Wis., Madison, Wis.)

20 **American Society of Perfumers,** closed meeting, Advertising Club, 35th St. and Park Ave., N. Y. C. (A.S.P., 630 Fifth Ave., N. Y. C. 20)

24-27 **Federal Wholesale Druggists Assn.,** annual meeting, The Greenbrier, White Sulphur Springs, W. Va. (R. C. Schlotterer, 2 Lexington Ave., N. Y. C. 10)

26-27 **Society of Cosmetic Chemists** seminar meeting, Barbizon Plaza (S.C.C., 2 East 63rd St., N. Y. C. 21)

29-30 **American College of Apothecaries** annual convention, Jack Tar Hotel, San Francisco, Calif. (Hamilton Court, 39th & Chestnut St., Phila., Pa.)

OCTOBER

1-6 **National Assn. of Retail Druggists'** annual convention. Hotel Fountainbleau, Miami Beach, Fla. (N.A.R.D., 205 W. Wacker Dr., Chciago 6, Ill.)

9-12 **11th Annual Instrument Symposium and Research Equipment Exhibit,** National Institutes of Health, Bethesda 14, Maryland.

10 **Synthetic Organic Chemical Manufacturers Assn.,** luncheon meeting, Hotel Roosevelt, N. Y. C. (See above.)

10 **Chicago Perfumery, Soap and Extract Assn., Inc.,** luncheon, Sheraton Towers. (Edward F. Laseh, Tenn. Products and Chemical Corp., 200 S. Michigan Ave., Chicago 4, Ill.)

10 **Society of Cosmetic Chemists** Chicago Chapter meeting, Henrici's Restaurant, Merchandise Mart, Chicago, Ill. (S.C.C., 2 East 63rd St., N. Y. C. 21)

10-13 **Research Equipment Exhibit,** National Institutes of Health, Bethesda, Maryland (James B. Davis, N.I.H., Bethesda 14, Md.)

12 **Pharmaceutical Advertising Committee** meeting, Roosevelt Hotel, N. Y. C. (P.A.C., 489 Fifth Ave., N. Y. C.)

14-19 **National Wholesale Druggists' Assn.,** annual convention, Americana Hotel, Bal Harbour, Fla. (N.W.D.A., 60 E. 42nd St., N. Y. C. 17)

16-19 **American Dental Assn.,** annual session, Philadelphia, Pa. (A.D.A., 222 East Superior St., Chicago 11, Ill.)

18 **American Society of Perfumers,** open meeting, Advertising Club, 35th St. and Park Ave., N. Y. (A.S.P., 630 Fifth Ave., N. Y. C. 20)

18-20 **Packaging Institute, Annual National Packaging Forum,** Biltmore Hotel, N. Y. C. (Chas. A. Feld, P.I., Inc., 342 Madison Ave., N. Y. C. 17)

31 **American Society for Microbiology,** first Interscience Conference on Antimicrobial Agents and Chemotherapy through Nov. 2. Commodore Hotel, N. Y. C. (A.S.M., 19875 Mack Ave., Detroit 36, Mich.)

NOVEMBER

1-3 **Parenteral Drug Assn.,** annual convention, Statler-Hilton Hotel, N. Y. C. (P.D.A., 1420 Snyder Ave., Philadelphia 45, Penna.)

2-3 **Society of Plastics Engineering** Plastics in Packaging, North Texas Section, Sheraton-Dallas Hotel, Dallas, Texas

7-10 **Packaging Machinery Manufacturers Institute Show,** Cobo Hall, Detroit, Mich. (W. L. Redding, Shea Expositions Corp., One Gateway Center, Pittsburgh 22, Penna.)

14 **Synthetic Organic Chemical Manufacturers Assn.,** luncheon meeting, Hotel Roosevelt, N. Y. C. (See above.)

14 **Society of Cosmetic Chemists, Chicago Chapter,** Henrici's Restaurant, Merchandise Mart, Chicago, Ill. (See above.)

15 **American Society of Perfumers,** open meeting, Advertising Club, 35th St. & Park Ave., N. Y. C. (See above.)

16-20 **Fifth International Automation Congress and Exposition,** New York Trade Show Bldg., New York City.

24 **Manufacturing Chemists' Assn.,** Statler Hilton Hotel, New York City (M. F. Crass, M.C.A., 1825 Connecticut Ave., N.W., Washington 9, D. C.)

27 **Exposition of the Chemical Industries,** New York Coliseum to Dec. 1 (E. K. Stevens, International Exposition Co., 480 Lexington Ave., N. Y. C. 17)

28 **Society of Cosmetic Chemists,** annual meeting and dinner dance, Biltmore Hotel, N. Y. C. (See above.)

29 **Toilet Goods Assn.,** Scientific Section meeting, Waldorf-Astoria Hotel, N. Y. C. (T.G.A., 1270 Ave. of the Americas, N. Y. C. 20) ●

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(*Continued from page 237*)

planters; it is one of the best paying for agriculturists unable to grow coffee.

Predicting a trend for any commodity, particularly one of natural origin, is beset with many hazards. Suffice it to say that current supplies are adequate and the future presents the possibility of increased production, which may well be absorbed by the world's expanding economy.

BOTANICAL DRUGS

(*Continued from page 169*)

Abroad, the cultivated botanical crops include opium, psyllium, ergot, papain, senna, stramonium, henbane, peppermint, cinchona. And attempts are on the way to cultivate others, including the Dioscoreas, ipecac, and *Rauwolfia.*

World War I gave some impetus to this cultivation, and World War II gave it a real boost, particularly in Central and South America. The German refugees in Argentina played a very large and important role there.

They tell about the Swede who didn't want to say "back and forth"—he put it the other way around, because you can't come back until you go forth. So, let us go forth into the world of botanicals and see what is happening today.

Out around the United States, it is largely a matter of higher prices as the agricultural wage scale climbs.

Peyote buttons come from the Southwest where the Indians collect the cactus buds formerly used in their rituals and now used in institutions for mental research. This drug used to be sold by the pound. Today the Indian collectors sell it to us by the piece.

In the Southeast the casualty was palmetto berries, which once were collected on Cape Canaveral. Can you imagine picking berries for pennies when you can help build and operate rocket bases for dollars?

Down in Latin America, from Venezuela and the nearby island of Aruba we receive aloes, but laborers find it much more lucrative to work in the oil fields.

From the forests of Central America and southern Brasil comes ipecac, still a drug valued in stubborn cases of amboebic dysentery, and as an expectorant. But over the years the collections have been heavy, and each year the *raicilleros* must go farther and farther into the jungles to collect a small bag of roots. A certain amount of replanting is done, but it is not enough. Cultivation projects under way may relieve the strain.

Over in Europe, things are pretty much the same as they were before the war. Drugs from behind the Iron Curtain come out rather sporadically, perhaps due to some other preoccupation.

Ergot once came to us from Spain, but because of the currency situation much of it is now being profi-

tably smuggled across the border into Portugal. In Switzerland and some other European areas, fields of rye are purposely infested with the ergot fungus to obtain a good yield of selected alkaloids. And for tomorrow there is still some hope of deep-tank culture of the fungus.

Locust beans for locust gum are gathered all around the Mediterranean, especially on the northern shores and on the island of Cyprus. A severe storm like the one last autumn can curtail the crop. Furthermore, the expanding use of this galactomannan can strain supplies.

On the other side of the Mediterranean grow the crops of Algeria and Morocco: coriander, colocynth, sandarac, and fenugreek. Warring Bedouins and fighting farmers have some difficulty in calmly satisfying the demands of the market. Furthermore, while we were having a cold wet Spring, Morocco had a drought, and the 1961 fenugreek crop from this area will be reduced some 55 per cent.

All of Africa is in such a turmoil that relatively tranquil areas as Nigeria (kola nuts) and Ghana (cocoa) hardly merit mention here. One interesting fact—Ghana is growing cocoa so fast and fine they almost have a surplus.

The Congo is a big question mark. From the central Congo comes *Rauwolfia vomitoria*, an economical source of reserpine. Now trade is most uncertain. At the eastern end of the Congo is the trust territory of the Ruanda Urundi where papain is produced. The colonials live on a day-to-day basis producing and selling what they have on hand, but hesitant to promise what they can produce and export tomorrow. Crops-into-cash is the slogan. Quantities are diminishing and prices rising.

Aloes and buchu come from the Union of South Africa, where the Boers have things pretty well in hand, but potential trouble looms inside every native hut.

From up near the Red Sea we obtain senna, henna, and *Hyoscyamus muticus*—for the Solonaceous alkaloids. Quantities are good; shipments are now easy and prices firm. But once the Aswan Dam turns the Nile valley back into a fertile land, prices will rise with the waters, and the waters are already up to the foot of the ancient monuments and temples. This would be a T.V.A. all over again. It's a question of whether production costs go down as fast as the standard of living rises.

Tragacanth prices have already been mentioned. Turkish styrax and licorice from the same area in the Middle East present the same picture.

Since the days of Lord Clive, India has been a large producer of botanicals. The climatic variations are considerable: snows in the Himalayas and in the foothills; sandstorms but a few hundred miles away; monsoon rains—up to ten times the rainfall we get in New York; and floods like the Mississippi once knew.

(*Continued on page 246*)

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Essential Oils and Aromatics

Laurence J. White, of *Industrial and Engineering Chemistry*, and Robert J. Eiserle, of Fritzsche Brothers, Inc., give a comprehensive review of methods of obtaining perfume raw materials, with special emphasis on Fritzsche operations, in *Ind. Eng. Chem.* 53:421, 1961.

The American essential oil industry is based on imports with the exception of the citrus oils from Florida and California, and oils from several other indigenous plants. Because of the quality of imported oils, these materials are seldom sold without some reprocessing. This can vary from a simple water wash to complete redistillation or fractionation.

Distillation is the major operation of the industry, and practices in the industry still mix a good bit of art with technology. Every type of plant material must be handled individually in the way that long experience has shown to be best.

The terminology of the industry divides distillation into three types: water, water and steam, direct steam. With the method called water distillation, plant material is in direct contact with boiling water. Heat is put into the still by conventional means such as an enclosed steam coil, steam jacket, or direct firing. The second technique employs a grid to hold the plant material off the bottom of the still. The water level is kept below the grid so that the plant material is in contact with saturated steam only. Direct steam distillation also uses a supporting grid. Live steam, saturated or superheated; is fed into the still below the charge.

Distillation has some drawbacks. Some components of essential oils are sensitive to heat, and the prolonged action of steam in the still can degrade the product. Some constituents disolve in water, and cannot be easily recovered. Others boil at too high a temperature to be carried over with the steam. Oils from delicate flowers, such as jasmine, are particularly sensitive to the rigors of distillation; such flower oils as well as other oils are often isolated by extraction.

Extraction with cold fat is called enfleurage. It is not widely used now except in the Grasse region of Southern France and some parts of Italy. Enfleurage is used with those flowers that continue to give off perfume after picking. The petals are laid, at room temperature, over a fat base made up primarily of lard. When the fat becomes saturated with oil, the oil is extracted with alcohol.

Most modern essential oil extraction plants use solvent systems based on materials such as petroleum ether or benzene. The key advantage of extraction over distillation is that temperatures can be held under 50° C. during most of the process. Extracted products, therefore, have a true-to-nature odor that is not matched by distilled counterparts.

A solvent extraction system, however, requires a relatively large capital investment and a crew of trained workers to run it. Distillation equipment can be simple, portable, and operated without much special knowledge. Operating costs of extraction are high compared to distillation because of unavoidable solvent losses.

The Fritzsche Clifton factory produces about 40 essential oils by distillation. The main ones are nutmeg, clove, celery seed, parsley seed, cinnamon, ginger, and black pepper. Solvent extraction is employed to make a series of oleoresins and resinoids are extracted gums, resins, and balsams used in perfumery.

The company produces over 200 aromatic chemicals. These range from purely synthetic materials such as cinnamic aldehyde to compounds that are islated from natural essential oils.

The company has four 250-gallon stills with 12-foot fractionating columns that are normally used to remove terpenes from essential oils. The yield is around 3 per cent and 20- to 30-gallon vessels are usually used to extract sesquiterpenes from the terpeneless oils.

Isolation of essential oils from aromatic plants by distillation is a batch process which is, in general, the same for most materials. But specific conditions such as temperature, pressure, length of the cycle, and amount of pretreatment of the plant material are different in every case.

Except for leaves that are relatively thin, all plant materials must be broken up to some extent before they are charged to the still. This process, called comminution, exposes some of the plant's oil glands, and reduces the thickness of material to be handled in the still. The over-all effect is to greatly increase speed of vaporization and distillation of the essential oil.

The company does the bulk of its grinding with two pieces of equipment. A Sprout-Waldron roller mill, fitted with special rolls, is used to treat seed-like materials. A Paul Abbe rotary knife cutter is employed on roots, leaves, and other fibrous materials. Each unit has a capacity of about 2000 pounds per hour. Plant materials from the grinders drop into bins which are pushed to the distillation area.

During steam distillation three things happen at once: Essential oils and hot water diffuse through the plant membranes, some components of the oils hydrolyze, part of the oil is decomposed by heat. The ideal distillation, then; is one in which the diffusion rate is as high as pos-

sible while hydrolysis and thermal decomposition are kept to a minimum.

Direct steam distillation, rather than water distillation or combined water and steam distillation, is usually used in large fixed installations. With this method temperature can be readily controlled by varying the steam pressure in the jacket and coil, and relatively little water comes in direct contact with the plant materials. Temperature of the steam rarely exceeds 110°C. Under these conditions, yields and rates are high, while the adverse effects of hydrolysis and thermal breakdown are kept small.

The company has 10 stills that are nrmally used to recover essential oils by distillation. These range in size from 400 gallons to 2000. The typical still has a 1000-gallon capacity, and takes a 4000-pound charge of plant material.

Several methods can be used to separate terpenes and sesquiterpenes from essential oils. A common practice is to remove terpenes by fractional distillatin under vacuum, and then eliminate sesquiterpenes by extracting the terpeneless oil with dilute ethyl alcohol. Concentration of the ethyl alcohol used will vary depending on the degree of alcohol solubility desired in the end product.

Oleoresin fennel is one example of the company's productin of oleoresins from herbs and spices. The Clifton plant has five extractors for making oleoresins. These range from 400 to 2000 gallons, and can take charges varying from 1000 to 8000 pounds. The extractors basically are just jacketed vessels with drains at the bottom. The solvent, acetone in the case of fennel seed, is circulated through the spice bed by means of a centrifugal pump. Steam in the jacket holds the solvent temperature at 40° to 50°C.

One recent development that is growing in imprtance is the use of spray dried perfume and flavoring materials. These "locked-in" products are used in dry-mix preparations where liquid perfumes or flavors are not always satisfactory. A conventional spray tower is used to make these products. The material to be spray dried is first emulsified with an edible gum, such as gum arabic. In this step, a homogenizer made of Cherry-Burrell, Cedar Rapids, Iowa, is used. The product consists of the perfume or flavor "wrappped" in a protective covering of gum.

The first step in evaluating an essential oil is usually a simple taste or odor taste. Odor and flavor are the key qualities of an essential oil, and a trained nose or tongue can detect most off-grade materials. Quality is further assured by standard tests such as specific gravity, optical rotation, refractive index, acid number, and ester number, for example. For special problems, the company uses infrared and ultraviolet spectroscopy, and vapor phase chromatography.

Pougere Perfumes

Fern, or fougere perfumes are similar in general effect to chypre, but considerably lighter, and consists of an oakmoss base compunded with patchouli, coumarin, and vanillin. Blenders include lavender, bois de rose, bergamot, and ylang ylang and the flowery note may be supplied by rose, cassie, jasmin or tuberose. Fixatives, which are optional, include synthetic musks, as well as civet, castor, or natural musk. Synthetics that can be used in a fougere composition include bornyl acetate as a blender, benzyl and methyl benzoates, methyl acetophenone, methyl salicylate and heliotropin as modifiers, and musk ketone and musk an oakmoss base compounded with ambrette, benzophenone, and dimethylhydroquinone as fixatives.

Grapefruit Oil

Grapefruit oil is mobile, yellow to orange to green-yellow in color with a citrus, somewhat sweet odor. The odor is reminiscent of sweet orange oil, but with a bitter note, so that it is quite useful in formulating bergamot compositions. Its major use is in flavors, the partially deterpenized oil being preferred. This is an unstable oil, subject to deterioration on exposure to moisture, air, or light, but the addition of a small proportion of antioxidant is effective.

Musk Indanes

According to Swiss Patent No. 349,732, issued to Polak & Schwarz Int. N.V., indane derivatives of the formula 1-dimethyl-6(7)-tert. butyl-4(5)-(RCO)-indane, in which R is hydrogen, methyl or ethyl, may be used as prefume components because of their musk odor. Indanes with only a single quaternary or tertiary carbon atom lose their musk odor. For the preparation of a simple jasmin composition, to a mixture of 10 parts of phenylethyl alcohol, 40 parts of benzyl acttae, 10 parts of benzyl propionate, 30 parts of amylcinnamic aldehyde, 5 parts of linalyl acetate, and 5 parts of linalool, add 2.5 per cent of propionyl-tert. butyl-1,1-dimethyl indane, which rounds out the odor of the composition, pushes the usual fruity character of the benzyl esters into the background an enhances the natural jasmin character. The composition can be usde in soap. Another mixture consists of 15 parts of benzyl acetate, 15 parts of amylcinnamic aldehyde, 15 parts of phenylethyl alcohol, 15 parts of hydroxycitronellal, 5 parts of rhodinol, 5 parts of terpineol, 10 parts of alpha-ionone, 10 parts of bergamot oil, 2 parts of ylang, 4 parts of benzoe resin, and 4 parts of storax. To this mixture add 2.5 per cent of acetyl-tert. butyl-1,1-dimethyl indane or the corresponding propionyl derivative.

Nutmeg Oil

Nutmeg oil may be almost colorless, or pale yellow, and possesses a light, fresh, spicy odor with some similarity to sweet marjoram oil. It is useful in men's products, for its spicy value and contributes interestig effects to fantasy perfumes. It blends well with oakmoss, bay leaf oil, amyl salicylate, linalool, and methyl cinnamic aldehyde, among others. Although the better grades of natural oil are somewhat superior, the terpeneless grade is cmmonly used, especially in flavor combinations.

Cypress Oil

Cypress Oil is occasionally used as a modifier in pine needle, citrus cologne and in a number of fantasy bouquets, and contains about 60 to 70 per cent of terpenes. It has a refrshing balsam odor, with a sweet final note. When partially deterpenized it is useful in ambre-labdanum type perfumes in combination with labdanum products, lavender oil, mandarin oil, clary sage, musk ambrette or other musks, styrax, etc.

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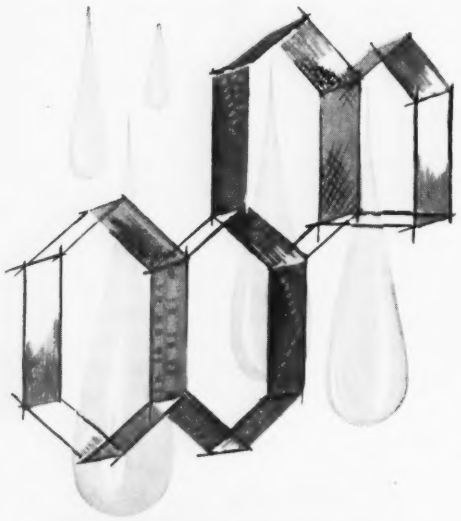

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***U.S. Patent #2,725,334 and foreign patents**

(*Continued from page 243*)

Opium, perhaps one of the most important botanical drugs because of its derivatives, comes to us from India and Turkey, where the legitimate cultivation of poppies and production of opium are very well-regulated industries. There is still the difficulty that these sources are far from our shores—almost on the opposite side of the world.

Many a tale can be told about poverty and pestilence in India. Once, in a railroad station, I was looking around for some oranges and peanuts—a healthfully pre-packaged supper. I felt something on my foot and jerked back a bit and looked down. A little boy was kissing my foot, his hand cautiously held by his sister. Supplication enough to break the heart of anyone for just a few coins. In an area such as this their father, if still living, probably could earn 30 or 40 cents per day at best loading bags of karaya or psyllium or henna into freight cars. Another way of expressing this poverty: the average per capita income in India is 14 cents per day.

One of the important Ceylonese exports is papain. Labor costs have gone up, and a virus disease has infested some of the trees. So prices climb, quantities diminish, and the qualities available will be more difficult to purify.

Embargoes, export bans and quotas are other interesting subjects. Some of these sometimes succeed. The former export quota on *Rauwolfia serpentina* is a well-known story, but another ban of just a few years ago might serve to illustrate an even more complex circumstance.

Collections of *Ammi visnaga* first came to us from Egypt for the extraction of khellin. The Egyptian government slapped an embargo on the seed, not so much to protect the supplies as to enable local industry to expand to monopolize the manufacture of the drug. Fortunately, Mother Nature seeded many another shore of the Mediterranean with the same seed. From another country, Algeria, supplies were obtained in abundance and at cheaper prices. The pity of it all was that the khellin produced at that time in Egypt was of inferior quality; so they lost out there. Furthermore, some of the off-quality alkaloid got into commerce and into clinical trials here, and then into unfavorable print because of reported side effects.

Indonesia was once a heavy exporter of sumatra benzoin, black pepper, and cinchona. Now India is the chief producer of pepper. As for cinchona, the war-ravaged plantations of Java are being reinstated slowly. Quinine is still used in many colonial areas for malaria, but today much of the quinine goes into effervescent tonic water and much of the bark is used to produce quinidine.

Sumatra benzoin, like many other Indonesian products, now comes to us by way of Singapore. It is smuggled in, exchanged for black market Straits dollars, and shipped out.

(*Continued on page 248*)

Industry's Books . . .

Allergy and Products Liability, *by Warren Freedman, Member of New York Bar, 529 pp., loose leaf binder, Central Book Co., Inc., Brooklyn (1961),* **$15.**

This single volume is designed as a realistic analysis and practical guide to understanding products liability. While the emphasis is upon the defense of a products liability situation, the interests of the manufacturer, distributor, and vendor do not entirely overshadow the consumer interest. Contents include Chapters 1—Introduction to Products Liability Generally; 2—The Nature of the Allergic Injury; 3—Medical Aspects of Allergies; 4—Non-Foreseeability of the Allergic Reaction; 5—Some Legal Aspects of Allergies; 6—Governmental Supervision over the Product; 7—Action in Tort: Negligence; 8—Action in Contract: Breach of Warranty; 9—Legislation and Statutory Labeling of the Product; 10—Aids to Discovery, Interrogatories, and Other Procedural Moves; 11—Products Liability Insurance; 12—Conclusions and Managerial Implications. A long list of appendices refer to cosmetics, for example, "What Consumers Should Know About Cosmetics," "Notices of Judgment under the Federal Food, Drug and Cosmetics Act Re Cosmetic Products," and the like.

Proprietary Handbook for International Trade, *published by The Proprietary Association, looseleaf form.*

This is an "informal guide" to markets abroad for American drug products. Although published primarily for members, it will be made available to nonmembers at an adjusted rate. The book contains helpful information on 20 countries gathered by members of firms belonging to the association and doing business in those countries. Included are current facts on product registration, labeling, exchange restrictions, import facilities and market size, as well as many "do's and don'ts" of international trade. Further information can be obtained by writing the Proprietary Association, 1717 Pa. Ave., N.W., Wash.

A Manual of Cutaneous Medicine, *by Donald M. Pillsbury, M.A., D.Sc,. Walter B. Shelley, M.D., Ph.D., and Albert M. Kligman, M.D., Ph.D., University of Pennsylvania, 430 pp., Illus., W. B. Saunders Co., Phila. (1961), cloth,* **$9.50.**

The goal of this work is to summarize the chief useful facts regarding the diagnosis, prevention and cure of the diseases affecting the skin which are encountered frequently in daily practice. It summarizes those principles of physiology, chemistry and anatomy which are most useful in promoting an understanding of the genesis of dermatologic disease. It emphasizes those changes in the skin which may be representative of systemic disease. It assesses the true usefulness, and the hazards, of the numerous methods of treatment of diseases affecting the skin. It indicates the diseases that may ordinarily be managed effectively in general practice, and those in which more specialized methods and experience may be essential.

Practical Mycology, a Manual for Identification of Fungi, *by Sigurd Funder, Ph.D., published by A. W. Broggers Boktrykkeri A/S, Oslo, distributed in the U.S.A. by Hafner Publishing Co., New York, 144 pp., cloth,* **$6.50.**

This book is designed to serve as an introduction to mycology for beginners, and as an aid for those who, without any special botanical knowledge, are interested in identifying the most common fungi they meet with in the course of their work, for example, bacteriologists, physicians, vetinary surgeons, biochemists, pharmacists, and workers in industrial fermentation, the food industry, agriculture. The author's purpose is to furnish the criteria whereon a determination is based, and the material which forms the basis for a systematic classification of the fungi. A series of drawings is presented to facilitate a rapid identification of the most frequently occurring fungi and the chief pathogenic forms which cause diseases in man, animals and plants.

The Encyclopedia of the Biological Sciences, *Edited by Peter Gray, Chairman, Department of Biological Sciences, University of Pittsburgh, 1119 pp., Reinhold Publishing Corp., New York (1961), cloth,* **$20.**

More than 800 specially-written articles from around the world are offered in this authoritative survey of the biological sciences. The presentation is truly encyclopedic, that is, all articles describe and explain their subjects, as well as define them, and the condensed, yet comprehensive treatments are clearly written and illustrated. This indispensable volume surveys the developmental, ecological, functional, genetic, structural and taxonomic aspects of the biological sciences, in addition to covering numerous topics in the fields of biochemistry and biophysics. The contributors, experts from the world over—selected for their international reputations—strike a nice balance between up-to-the minute presentation and classical accounts. Articles on such timely subjects as Biological Warfare, by L. D. Fothergill, Fort Detrick, and Space Biology, by O. E. Reynolds, take their place beside those on Enzymes, by Edwin C. Webb, Cambridge University, Hepaticae, by Johannes Proskauer, University of California, Berkeley, and Origin of Life, by A. I. Oparin of the Bach Institute of Biochemistry, Moscow.

Microbial Cell Walls, *by M. R. J. Salton, 94 pp., pocket size, John Wiley & Sons, Inc., New York (1960), cloth,* **$3.50.**

This book makes available the 1960 Ciba Lectures in Microbial Biochemistry, presented at the Institute of Microbiology, Rutgers University. It describes the general physical, chemical, and biochemical properties of microbial cell walls which constitute the major structural components of microorganisms. The book emphasizes some of the unusual features of the chemical substances and structures found in bacterial cell walls and outlines some of the unique biochemical processes involved in the formation of the cell walls and the manner by which antibiotics prevent the assembly of the walls. The book should stimulate anyone concerned with vaccine production and chemotherapy to consider a new approach to their specific problems.

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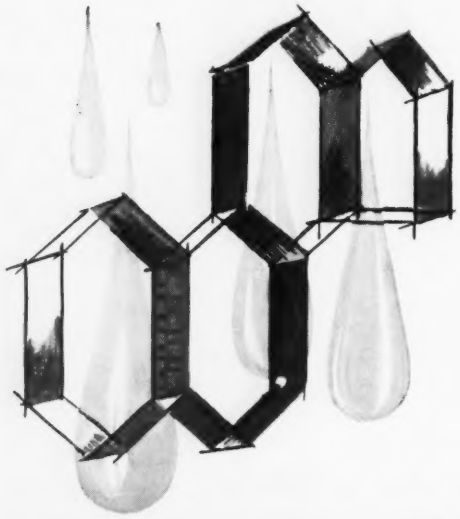

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(*Continued from page 246*)

It is said that one of the few man-made structures that will be discernible to the first man on the moon is the Great Wall that runs across China. Today, it might just as well run all around Communist China. We are cut off from supplies of Chinese rhubarb—hardly a man in the industry can recall the difference between Shensi Flat and Canton Round rhubarb. Galangal root, too, has disappeared. Star anise seed is another item of the past for us; this wonderful flavoring for pharmaceuticals has vanished, although it has been replaced by some rather satisfactory synthetics. China cassia was another good flavor —especially in Grandmother's hot gingerbread.

Along the way, we have covered most of the "hot spots" in the world whence come our botanicals. Left over is Cuba—not directly important because no botanicals come from there. But Cuba is indirectly important if the political unrest there spreads to other countries in Latin America. Already some of these countries have felt communism, others dictatorships, and only a few have known calm development, under a democracy or otherwise.

Undoubtedly we shall experience other disturbances as we go along. One consolation is that we are now more experienced and able to anticipate them to some extent—and, we hope, to cope with them more adeptly.

RECENT PATENTS

(*Continued from page 236*)

Manufacturing Ovary Cell Preparations for Therapeutic Purposes.

2,983,649—Francesco Vismara Societa (Italy) — Ricinoleic Acid Ester Solutions Of Adreno-Cortical Hormones.

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2,983,752—Hoffmann-La Roche Inc.—Synthesis of Canthaxanthin and Rhodoxanthin.

2,984,662 — Les Laboratoires Francais Chimiotherapie (France)—18-Oxygenated Steroids.

2,984,668—G. D. Searle & Co.—3-(2-Hydroxyethyl)-4-Methyl-5-Phenyloxazolidine.

2,984,670—Upjohn — Novel 3-(1-Hydroxy-1-Phenyl-3-Amino-Propyl)Indoles.

2,984,675—G. D. Searle & Co.—3-Oxygenated 6β-Halo-5-Methyl-19-Nor-5β-Cholest-9-Enes.

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2,985,671—Upjohn—2α-Methyl-6-Dehydro Steroids, 21-Esters Thereof and Intermediates.

2,985,672—Canadian Patents and Development Limited — 17 Alpha-Halogenated-11, 21-Dioxygenated-4-Pregnene-3, 20-Diones.

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(*Continued from page 249*)

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GENERIC-NAMED DRUGS

(*Continued from page 165*)

This being so, it would seem obvious that most physicians will be reluctant in their normal practice to give up brand-name prescribing. Their patients save very little money—Rhode Island says less than 5 per cent—and they run an appreciable risk of getting sub-standard medication.

It follows, moreover, that any government effort to force the medical profession into generic prescribing is an effort to pressure the doctor into second-rate medicine, and relinquish an essential prerogative of his calling, to determine exactly what medication he wishes his patient to receive.

If this pressure is applied to welfare prescriptions, giving the indigent alone a "drugs anonymous" system, it sets up a double standard of medicine, one for the carriage trade and one for the poor—with, as I have shown, mighty little savings to the state.

MAKEUP MARKET

(*Continued from page 163*)

dustry. Nevertheless, this table, which was compiled from substantial data, gives material valuable for market studies to discover sources of future industry growth.

TABLE 4
PERCENTAGE REGULAR USERS OF MAKEUP PRODUCTS
By Age Groups

	14-17	18-25	26-40	41-54	55-plus
Lipstick	82	92	86	84	57
Face powder	18	31	39	48	51
Rouge	3	11	27	34	36
Eyebrow pencil	27	39	30	23	12
Mascara	25	28	19	14	4
Eye shadow	11	19	12	8	3
Eye liner	9	11	5	3	1

TABLE 5
PERCENTAGE OF FREQUENCY OF LIPSTICK PURCHASE
By Age Groups

	Average	13-18	19-25	26-40	41-55	55-plus
12 times a year or more	6	16	12	8	6	3
6 times	12	19	19	15	10	7
4 times	15	21	18	18	12	11
2 times	28	25	29	29	32	34
1 a year	22	12	14	19	29	38

The frequency of purchase, as can be seen in TABLE 5, holds the biggest potential for future growth of all cosmetic products. It should be the studied program of the industry to stimulate a greater frequency of purchase and of use of cosmetic products in every age group, in every income group and in every geographical area.

Cosmetic manufacturers have spent millions of dollars in advertising, in sales training and in other ways to stimulate and increase cosmetic usage. However, only a small part of the industry has made any substantial contribution to education in this field. This part of the industry, properly associated with fashion education—including companies who have successfully established a retail and public image of glamor and companies who have invested an enormous amount of money in training skilled sales people to contact the consumer—this part of the industry has made a vital contribution not adequately understood and rarely acknowledged. Such companies, selling through personal sales representatives in stores with a suitable cosmetic environment, have been almost solely responsible for stimulating a greater frequency of both purchase and use. Their success in persuading women to own and use more than one lipstick is an example, and their investment has made it possible for heavy national advertising to stimulate and maintain a basic mass market. Without their work and the cooperation of a group of stores that provide a suitable environment for it, the mass market for many cosmetics that are not purely functional would, in our opinion, undergo substantial shrinkage.

TABLE 6, again, has been compiled from various sources. In general, it shows a normal pattern.

TABLE 6
PERCENTAGE REGULAR USERS OF MAKEUP PRODUCTS

	By Income		
	$3,500 and less	$3,500 to $10,000	$10,000 and more
Lipstick	65	79	86
Face powder	33	42	48
Rouge	17	24	34
Eyebrow pencil	14	25	30
Mascara	9	15	20
Eye shadow	3	6	12
Eye liner	2	4	7

If any single factor has been responsible for the boom in cosmetics during this last decade, it has been the increase in disposable income that has reached every social or economic group in the country. Obviously, the low income groups are limited in every form of social activity associated with the use of cosmetics. This is so even though cosmetics, like housedresses, are available everywhere at very modest prices. Despite today's extravagant competition for each penny of the disposable dollar, people with low incomes are compelled to limit their use of many cosmetics. •

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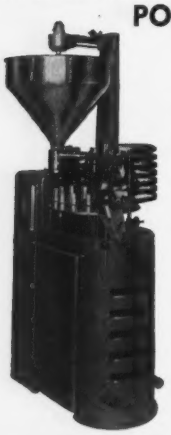

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Skin Research

Hydroquinone Skin Bleaching

Lightening pigmented blemishes with a bleaching agent has never been very satisfactory. This study was undertaken by M. C. Spencer (*Arch. Dermatol.* 84: 181, 1961) in an effort to develop a safe and effective bleaching cream. The unpredictability of bleaching coupled with the frequently alarming progression of the bleaching effect of monobenzylether of hydroquinone (MBH), even after applications have been discontinued is now well established. Even in much lower concentrations of MBH than is generally recommended, leukomelanoderma has been observed with significant frequency.

This report is based on the results of a 2½-year study of hydroquinone and 2 of its derivatives in simulated use tests as a bleaching cream. The concentrations of all 3 compounds used in a vanishing cream base varied from 1 per cent to 10 per cent. Both the paired comparison and the double-blind methods of evaluation were used. Where more than one concentration was used, serial applications were applied in bilateral areas. Applications were done twice daily, 7 days weekly, for periods of 2 and 4 months.

As a further test of the bleaching ability of one of the more suitable derivatives of hydroquinone, a paired comparison study was carried out using a standard bleach cream containing 3 per cent ammoniated mercury.

The choice of the hydroquinone derivatives used was based on the results of the triple freeze prophetic patch test. Of the 4 derivatives tested by this method, only 2 were found to be relatively free of sensitizing capacity to justify further evaluation in simulated use trials. These 2 compounds were: tertiary butyldimethyl ether of hydroquinone and monotertiary butylmonomethyl ether of hydroquinone. The other two, not used, were tertiary butylmonobenzyl ether of hydroquinone and monotertiary butylhydroquinone.

For 2 months, concentrations of 1 per cent, 4 per cent, and 7 per cent of each of these compounds in a vanishing cream base were used on a group of 142 white and 6 Negro male subjects. The bleaching achieved at the end of the 2 months was either minimal or equivocal. No significant reactions occurred. No sensitization developed.

Using 10 per cent concentrations of both compounds, a double-blind paired comparison test was done for 2 months on 41 white and 28 Negro subjects. Bleaching, although minimal, was decidedly in favor of tertiary butyldimethyl ether of hydroquinone.

However, the limitation of this compound as a bleaching agent was further emphasized by testing on a group of 16 white and 49 Negro male subjects. When a 10 per cent concentration was added to a standard 3 per cent ammoniated mercury bleach cream, no significant difference in lightening was noted after a 2-month trial when compared with a standard 3 per cent ammoniated mercury bleach cream used on the opposite hand. Bleaching with either of these preparations was minimal or equivocal at the end of this period.

On the other hand, hydroquinone alone, or in combination with tertiary butyldimethyl ether of hydroquinone, resulted in significant lightening during a 4-month simulated use test on a group of 53 white and 45 Negro male subjects. The concentration of 5 per cent hydroquinone was reduced to 1.5 per cent and 2 per cent after 3 weeks because of contact dermatitis occurring in 33 of the original 122 subjects. All but one of this group who developed the contact dermatitis were white. In every case, with the exception of one who was lost from observation, subsidence of this contact dermatitis occurred despite continued use of the 1.5 per cent and 2 per cent hydroquinone. Furthermore, no cases of contact dermatitis developed after the lower concentrations of hydroquinone were started.

Both double-blind and paired comparison testing was carried out using hydroquinone alone or in combination with tertiary butyldimethyl ether of hydroquinone in a vanishing cream base. No significant difference in the degree of bleaching achieved was observed with either creams containing the active ingredients. This observation, along with the results of previous testing, emphasized that the results obtained were due to the hydroquinone. A clinical inflammatory reaction was not a prerequisite for bleaching. When irritation occurred, it did seem to enhance the result and speed up the bleaching effect.

A significant difference in response to treatment was observed between white and Negro subjects. The incidence of bleaching, as well as the degree of lightening, was higher in the white subjects. However, this was a comparison of the effect on lentigines in white skin with the effect on normal Negro skin.

In general, lightening was not observed to any degree until after 6 weeks or possibly sooner. Further response from treatment after lightening was noted was then so gradual as to be insidious. The Woods lamp examination of the entire group after treatment was stopped did not reveal any leukodermatous change as had previously been ob-

served after simulated use tests with concentrations of monobenzyl ether of hydroquinone. Daily ultraviolet light exposure to the hands of 6 subjects after simulated use tests were stopped resulted in significant tanning of previously treated areas within 2 weeks. Treatment of one hand with the hydroquinone cream did not decrease tanning when both hands were exposed to daily ultraviolet irradiation.

Return of pigmentation to the same degree as before testing was noted in all subjects within 3 to 6 months. In some, repigmentation had occurred within 6 weeks. The time interval for the return of pigmentation was correlated directly with the degree of depigmentation achieved. Repigmentation of normal Negro skin occurred sooner than bleached lentigines of white skin.

Biopsy examinations of hydroquinone-treated and untreated lentigines were performed. The untreated area revealed a senile lentigo with active melanin formation. In contrast, the hydroquinone-treated area showed a senile lentigo with approximately the same number of melanocytes containing fewer melanin granules. This was interpreted as indicating normal formation and excretion of melanin, but at about half of the amount seen in the control or untreated area.

Previous experience with MBH as a bleaching agent had suggested that hydroquinone was the probable active agent, even though the details of this inhibition are not known. The clinical use of hydroquinone in 10 per cent to 30 per cent concentrations was felt to be unsatisfactory. This observation was based on the inconsistent results and the deeply colored products of auto-oxidation of hydroquinone that would form and adhere to the skin surface when 10 per cent to 30 per cent concentrations were used. This latter objection was not noted with 1.5 per cent and 2 per cent concentrations. A gray surface discoloration in the ointment jar from air exposure did develop within a few weeks after repeated use. However, with the concentrations used, this was not noticeable on the skin surface after application.

The variation in patient response to bleaching with hydroquinone did not seem to be any greater than with MBH. Just as with MBH, clinical inflammation did not always precede bleaching. One-third of those bleached in this study did not have any preceding inflammation. However, the higher percentage of white subjects bleached may have been related to the higher incidence of irritation in this group. Bleaching observed in 45 per cent of those treated in this study was exceeded appreciably in selected private patients.

Redness and burning, while noted from the initial use of a 5 per cent concentration of hydroquinone, did not occur with concentrations of 1.5 per cent and 2 per cent. Although hydroquinone is recognized as a sensitizer, with the concentrations used sensitization did not occur in a single subject during the 4 months of simulated use.

Anatomy of the Skin

Hermann Pinkus, Department of Dermatology, Wayne State University, Detroit, Michigan, reviews the literature on the Anatomy of the Skin for 1958 in *Dermatologica* 120: 231, 1960. References are given in the original paper, as well as additional material that has been edited out of the following extensive abstract.

General; Age and Regional Differences

The fourth edition of *Appleton's* Surface and Regional Anatomy brings good pictures of surface contours in relation to underlying structures. *Horstmann* reviews regional differences of skin and underlines that certain essential features are preserved in transplanted skin and may manifest themselves later in life, e.g. hairiness, subcutaneous fat, pigmentation. *Vilanova* reviews physiological and pathological changes of the skin in old age. *Ronchese* offers the thought that in rare instances a child is born with skin larger than the body it is made to cover (cutis laxa, dermatolysis). The author prefers the term dermatomegaly for this phenomenon which is normally encountered in the bloodhound. *Lee* measured stretch and recoil of strips of skin when exposed to 10 g. weights. The skin was taken at necropsy from forehead and flexor surface of the forearm of 35 Chinese ranging in age from 4 months to 84 years. Extensibility decreases with age on the forehead, is greatest at 20 years on the forearm, when microscopic examination shows the greatest amount of collagen with the smallest proportion of elastic fibers. *Jansen, Rottier* used a motor driven device to stretch and rupture strips of abdominal skin. Elasticity, strength, and elongation at time of rupture were not influenced by the presence of striae, neither were these factors definitely correlated with thickness, dry weight, or hexosamine content. Hormonal influences are a potential factor.

Fetter reports on the distribution of eye and hair color in 2492 men and women assembled for the 1955 Spartak Festival in Czechoslovakia. Red hair is very rare. *Sanchez, Schwidetzky* surveyed eyes and hair in 9637 school children on the largest of the Canary Islands. *Walter* states that there is statistically valid correlation between pigmentation and intensity of ultraviolet radiation in the habitat of different ethnic groups within the major human races. Exceptions may be explained by relatively recent migrations.

Pellnitz, Silomon studied the growth of the human ear in 1000 individuals after adolescence. Between the third and ninth decades the physiognomic length increases 11 mm. on the average in men, 13 mm. in women. Ears are on the average 4 mm. smaller in young women as compared with men. The auricular cartilage grows in size due to increase of intercellular substance and loss of elasticity. *Hirth, Nibler* find analysis of factors such as form, folding, position and angle relative to head, and of the various parts of the concha helpful in the evaluation of paternity.

Pigment of Hair

Quevedo, Isherwood demonstrated dopa-positive melanocytes in the epithelial germ of resting hair follicles of C3H mice following 3 or 4 weekly exposures to moderate doses of X-rays. Such cells normally are not demonstrable during telogen. *Silvers* transplanted neural crest free and neural crest containing regions of 10-13 day albino mouse embryos into adult spleens. There was complete correlation between absence and presence of neural crest and that of clear cells in the hair matrix. This result is additional indication that these clear cells in albino hair are melanocytes.

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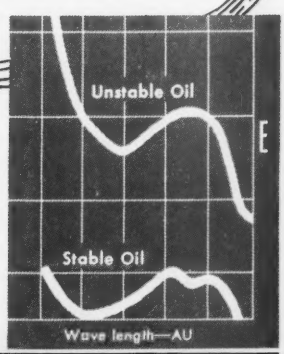

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TRADE LITERATURE

Silicones. General Electric, Silicone Products Depart., Waterford, New York—8-pg., 2-color illus. catalog (CDS-129C) describes the complete line of silicones and their uses. Four general categories are covered, dealing with silicone fluids, silicone protective coatings, silicone electrical insulation and silicone rubber.

Product Development Facilities. Evans Research and Development Corporation, 250 East 43rd St., New York City 17—4-pg., illus. bulletin describes the firm's product development facilities, including flavor analysis, new product technology, pilot plant, pilot consumer panel, sensory panel.

Ball Valve. Hydromatics, Inc., 5 Lawrence Street, Bloomfield, N. J.—6-pg. folder (HTB-261) enumerates the eight important valve features that a buyer should look for in a ball valve. It includes drawings, tables and charts.

Mount Style Vibration Inducer. Martin Engineering Company, Neponset, Ill.—42-pg. catalog shows 52 types and 4 motive powers of the DVP series of vibrators. Available in 5 sizes, these vibrators are the most powerful known for their weight.

Packaging. Creative Packaging, Inc., which comprises two operating divisions—Diamond Plastics Industries and Paper Package Company, 111 Monument Circle, Indianapolis—8-pg. illus. brochure describes the facilities and services of the packaging firm, emphasizing the advantages of single-source responsibility for design, manufacture and quality control of integrated packages, and the materials and processes available.

Chemical and Process Machinery. Irving Barcan Company, 249—51 Orient Avenue, Jersey City 5, N. J.—bulletin lists a partial stock of rebuilt chemical and process machinery.

Blister Packaging. Jackmeter Corporation, 253 West 26th Street, New York 1, N. Y.—23-pg. illus. booklet on blister packaging discusses types of thermoforms and their selection, advantages and limitations, characteristics of sheet plastic, forming the thermoform, selection of stock, coatings, printing process and ink, assembly and types of blister packs, products successfully packed in various types of blister, plus a thermoforming glossary.

Centrifugal Pumps. Goulds Pumps, Inc., 223 Black Brook Road, Seneca Falls, N. Y.—Bulletin (#722.4) gives complete information on high pressure multistage centrifugal pumps, Models 3360-3365. Complete specifications, performance curves, materials of construction, dimensions are given.

Engineering Manual. Trans-Plastics Corporation, 6700 Morgan Avenue, Cleveland 27, Ohio—Introductory section to 80-pg., 2-color engineering manual tells a comprehensive story of the new company, its policies, history of the materials, its engineering and fabrication services, its products and product characteristics.

Liquid Level Gage Valves. Jerguson Gage & Valve Company, 80 Adams Street, Burlington, Mass.—24-pg. catalogs (#397 and #398) illustrate and describe the features, styles, sizes and construction

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details of Jerguson Union Bonnet and Screwed Bonnet Liquid Level Gage Valves. Included are drawings and detailed tables of standard and optional features.

Ball Valves. Hills-McCanna Company, 400 Maple Avenue, Carpentersville, Ill. —31-pg. catalog (#1200) gives comprehensive information on manually operated and pneumatically operated ball valves in sizes from ¼-inch through 12-inch. Two basic types of valves are catalogued in detail. Included are dimensions and weights, material specifications, typical Cv values, pressure-temperature rating charts, and special valves and automatic vale hookup diagrams.

Stainless Steel Valves. Valve & Fitting Division, Cooper Alloy Corporation, Hillside, N. J.—132-pg., illus. catalog covers the complete line of stainless steel valves and accessories. Valves are shown in a wide range of types, sizes, and connections, and temperature and pressure ratings. Design features, special operating mechanisms, materials of construction, principal dimensions, and cross-section drawings are given.

Propylene Glycol. Jefferson Chemical Company, Inc., P.O. Box 303, 1121 Walker Avenue, Houston 1, Texas—brochure deals with the properties and applications of propylene glycol, and provides extensive solubility data in tabular form.

Methylparaben and Propylparaben. B. L. Lemke & Company, Inc., Lodi, N. J.—booklet "Preservatives" fully outlines the effective concentrations of propylparaben and methylparaben that have been established for a number of food products.

Texapon KM 14 Special. Henkel International GMBH, Dusseldorf, Germany—special formulas, using Texapon KM 14 Special and Texapon K 14 S Special, for shampoos, bubble baths, and bath extracts are available.

Price List. Fritzsche Brothers, Inc., 76 Ninth Avenue, New York City 11—11-pg. price list includes essential oils, sesquiterpeneless and terpeneless oils, citrus concentrates, floral absolutes and concretes, aromatic chemicals, animal fixatives, tinctures, resinoid fixatives, oleoresins, superesins, specialties, balsams, gums and sundries, and colors. A flavor catalog is also available

Center-Slung Centrifugals. Tolhurst Centrifugals Division of American Machine and Metals, Inc., East Moline, Illinois.—20-pg. illus. catalog (#TC-16-17) describes center-slung centrifugals for liquid-solids separation and gives construction details and specification tables, and an alignment chart for the graphic computation of centrifugal force.

Stretch Packaging. Inpak Systems, Inc., 141 East 44th Street, New York 17.—4-pg. bulletin describes the advantages of stretch packaging, which consists of a die-cut card to which a sheet of Vitafilm has been attached in a windowing operation in the carton plant.

Corrugated Boxes. Hinde & Dauch Division, West Virginia Pulp and Paper, 407 Decatur Street, Sandusky, Ohio.—4 booklets are available on corrugated packaging: How To Seal Corrugated Shipping Boxes, How To Merchandise With Corrugated Boxes, How To Specify Corrugated Boxes, and How To Use Printing On Corrugated.

Pneumatic Conveying Systems. Sprout, Waldron & Co., Inc. (See above)—Bulletin (#228) shows all standardized components, capacities, horsepower requirements, and complete instructions on how to select and order a pneumatic conveying system. Systems cover capacity requirements of 1000 to 40,000 pounds per hour. •

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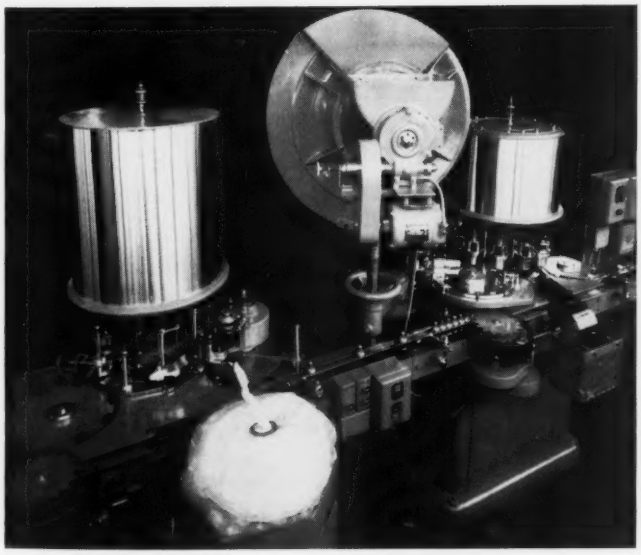

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